STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

December 28, 2021

Mark Appleby
Centerline Communications
750 West Center Street, Floor 3
West Bridgewater, MA 02379
mappleby@clinellc.com

RE: **EM-T-MOBILE-138-211116** - T-Mobile notice of intent to modify an existing telecommunications facility located at 623-627 Honeyspot Road, Stratford, Connecticut.

Dear Mr. Appleby:

The Connecticut Siting Council (Council) is in receipt of your correspondence of December 17, 2021 submitted in response to the Council's December 16, 2021 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie Bachman
Executive Director

MAB/FOC/emr

From: Mark Appleby <mappleby@clinellc.com>
Sent: Friday, December 17, 2021 12:04 PM
To: Robidoux, Evan <Evan.Robidoux@ct.gov>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: RE: Council Incomplete Letter for EM-T-MOBILE-138-211116 (Honeyspot Road, Stratford)

Evan,
Please find attached exempt mod application EM-T-MOBILE-138-211116 engineer stamped pages are 25 & 63 hard copy in the mail and will arrive Monday

Mark Appleby | Site Acquisition Consultant
750 W Center St, Suite 301 | West Bridgewater, MA 02379
Mobile: 860.209.4694 | Fax: 508.819.3017
mappleby@clinellc.com | www.centerlinecommunications.com

Centerline Communications
Mark Appleby
750 West Center Street, Floor 3
West Bridgewater, MA 02379
860-209-4694
mappleby@clinellc.com

December 17, 2021,

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
623-627 Honeyspot Rd Stratford, CT
Latitude: 41.1769138
Longitude: -73.1460388
Sprint, is part of T-Mobile USA #: CTFF899A_ Sprint Keep
RE: EM-T-MOBILE-138-211116

Dear Ms. Bachman:

Sprint, is now part of T-Mobile USA, hereinafter referred to as "Sprint/T-Mobile currently maintains six (6) antennas at the 72- foot level of the existing 100-foot tower at 623-627 Honeyspot Rd Stratford, CT. The 100-foot tower is owned by Becker LLC and the property is owned by John & Deborah Becker. Sprint/ T-Mobile now intends to remove six of its (6) existing antennas and replace with nine (9) new antennas at the 72-foot level. The existing T-Arm Mount will be removed, and a new mount will be installed and have adequate capacity for the proposed changes.

Planned Modifications:

Remove and Replace:
Existing T-Arm Mount **(Remove)**- (1) Site-Pro 1 F4P-8W Mount with Handrails **(Replace)**

Remove:
(3) RFS AVXSPP18-C-A20 Antennas **(Remove)**
(3) RFS APXVTM14-C-120 Antennas **(Remove)**
(9) RRUS **(Remove)**

Install New:
(3) Ericsson Air 6449-B41 Antennas
(3) RFS APXVAALL24_43-U-NA20 Antennas
(3) Commscope VV-65A-R1 Antennas
(3) Ericsson RRUS 4480 B71-B85
(3) Ericsson RRUS 4460-B25 B66

Remove and Replace:
(4) Hybrid Coax **(Remove)** (3) Hybrid Coax **(Replace)**

Equipment Platform:
- Remove 4 Existing Cabinets
- Install 3 New Cabinets

This facility was approved by the Town of Stratford. The zoning file is no longer available from the town. Please see attached email from the Office of Planning and zoning November 5, 2021 and also attached last Exempt Mod approval dated January 22, 2019.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Laura Hoydick as Stratford Mayor, Jay Habinsky Planning & Zoning Administrator, Town of Stratford, Becker LLC as Property Owner and Tower Owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S;A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Respectfully submitted,

Mark Appleby

Mark Appleby
Mobile: 860-209-4694
Fax: 508-819-3017
Office: 750 West Center Street, Floor 3 West Bridgewater, MA 02379
Email: mappleby@clinellc.com

Attachments

cc: Laura Hoydick – as Mayor
Jay Habinsky – Planning & Zoning Administrator
Becker LLC as Property owner & Tower Owner

Exhibit A

Original Facility Approval

Mark Appleby

From: Daniel Brennan <dbrennan2@townofstratford.com>
Sent: Friday, November 5, 2021 9:21 AM
To: Mark Appleby
Subject: Re: Cell tower 623-627 Honeyspot Rd Stratford CT

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Mark,

I have searched through all of our existing records and was unable to locate the original approval for the cell tower located at 623-627 Honeyspot Rd, Stratford Ct.

Thank you,
Dan Brennan
Office of Planning & Zoning
(203) 385-4017

From: Mark Appleby <mappleby@clinellc.com>
Sent: Monday, November 1, 2021 10:47 AM
To: Daniel Brennan <dbrennan2@townofstratford.com>
Subject: Cell tower 623-627 Honeyspot Rd Stratford CT

Dan,
Per our conversation regarding the tower at Honeyspot Rd which was originally approved by the town can you find me any record of that town approval as II need it for the Connecticut Sting Council Application.
If you are unable to find the original approval please email me back stating the records are not available.
Thank you for your assistance.

Mark Appleby | Site Acquisition Consultant
750 W Center St, Suite 301 | West Bridgewater, MA 02379
Mobile: 860.209.4694 | Fax: 508.819.3017
mappleby@clinellc.com |
https://link.edgepilot.com/s/85f39e9c/tqwMxVP_ZkOopZ6sqLWYzg?u=http://www.centerlinecommunications.com/

STATE OF CONNECTICUT

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www.ct.gov/csc

January 22, 2019

Luzmaria Guzman
Zoning and Permitting Specialist
SAC Wireless
540 West Madison, 9th Floor
Chicago, IL 60661

RE: **EM-SPRINT-138-190103** – Sprint notice of intent to modify an existing telecommunications facility located at 627 Honeyspot Road, Stratford, Connecticut.

Dear Ms. Guzman:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;

2. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;

3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

4. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by Sprint shall be removed within 60 days of the date the antenna ceased to function;

5. The validity of this action shall expire one year from the date of this letter; and

6. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated December 28, 2018. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require

explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/FOC/emr

c: The Honorable Laura R. Hoydick, Mayor, Town of Stratford
John Rusatsky, Zoning Enforcement Officer, Town of Stratford
Jay Habansky, Planning & Zoning Administrator, Town of Stratford
Becker, LLC, Property Owner

Exhibit B

Property Card

623 HONEYSPOT RD

Location	623 HONEYSPOT RD	**Mblu**	30/6 12/ 6/ /
Acct#	0795100	**Owner**	BECKER LLC
PBN		**Assessment**	$802,690
Appraisal	$1,146,700	**PID**	8228
Building Count	1		

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$932,200	$214,500	$1,146,700

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$652,540	$150,150	$802,690

Owner of Record

Owner	BECKER LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	951 BEAVER DAM RD STRATFORD, CT 06614	**Book**	3374
		Page	0243
		Sale Date	04/20/2010
		Instrument	04

Ownership History

Ownership History						
Owner	**Sale Price**	**Certificate**	**Instrument**	**Sale Date**	**Book**	**Page**
BECKER LLC	$0		04	04/20/2010	3374	0243
BECKER JOHN & DEBORAH (SV)	$54,000		UNKQ	07/17/1984	0597	0087
TOTH JOHN S & CAROL A (SV)	$47,000		UNKQ	09/24/1982	0573	0794
PAOLA FRANK & ROSALIE (SV)	$24,000		UNKQ	03/21/1969	0448	0174

Building Information

Building 1 : Section 1

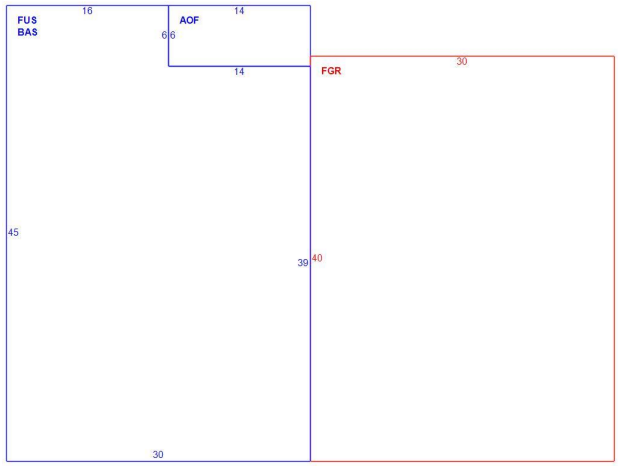
Year Built: 1985
Living Area: 2,616
Building Percent Good: 74

Building Attributes	
Field	**Description**
STYLE	Telephone Bldg
MODEL	Commercial
Stories:	1 Story
Occupancy	1.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Built Up
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	Concr-Finished
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Partial
Struct Class	
Bldg Use	Tel Rel Tw
Usrfld 215	
Usrfld 216	
Usrfld 217	
Usrfld 218	
Usrfld 219	
1st Floor Use:	434
Heat/AC	Heat/AC Pkgs
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Ceil & Walls
Rooms/Prtns	Average
Wall Height	10.00
% Comm Wall	

Building Photo

Building Photo
(http://images.vgsi.com/photos/StratfordCTPhotos///0088/IMG_0057_8816

Building Layout



(ParcelSketch.ashx?pid=8228&bid=8228)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,266	1,266
FUS	Finished Upper Story	1,266	1,266
AOF	Office Area	84	84
FGR	Garage	1,200	0
		3,816	2,616

Extra Features

Extra Features	Legend

Code	Description	Size	Value	Bldg #
A/C	Air Condition	1866.00 S.F.	$3,600	1
MEZ1	Mezzanine - Unfin	144.00 S.F.	$1,500	1

Land

Land Use

Use Code	322
Description	Gar/Off
Zone	CA
Neighborhood	100
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.22
Frontage	0
Depth	0
Assessed Value	$150,150
Appraised Value	$214,500

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV	Paving	AS	Asphalt	4000.00 S.F.	$4,000	1
CTR	Cell Recievers			4.00 Units	$698,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$932,200	$214,500	$1,146,700
2019	$932,200	$214,500	$1,146,700
2018	$930,200	$195,000	$1,125,200

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$652,540	$150,150	$802,690
2019	$652,540	$150,150	$802,690
2018	$651,140	$136,500	$787,640

623-627 Honeyspot Rd.

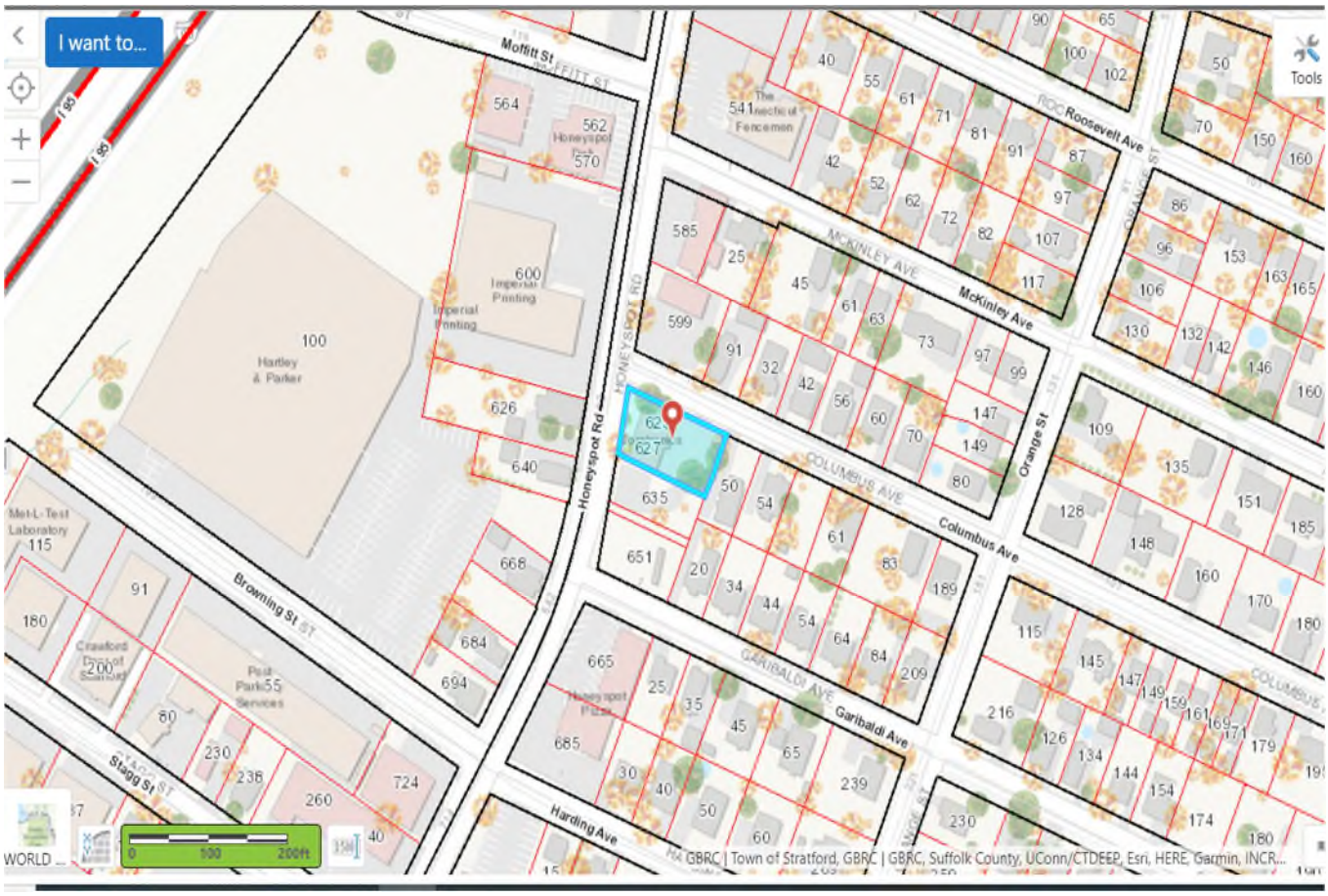


Exhibit C

Construction Drawings

PROJECT INFORMATION

SITE NAME:	CTFF899A
SITE NUMBER:	CTFF899A
SITE ADDRESS:	623-627 HONEYSPOT ROAD STRATFORD, CT 06615
COUNTY	FAIRFIELD
MUNICIPALITY:	CITY OF STRATFORD
ZONING:	U
LATITUDE:	N 41.17691388° (NAD83)
LONGITUDE:	W -73.14603888° (NAD83)
TYPE OF SITE:	MONOPOLE
STRUCTURE HEIGHT:	100'-0" AGL
ANTENNA CENTER:	72'-0"AGL
GROUND ELEVATION:	16.4 ft (NAVD 88)
BUILDING OWNER NAME:	BECKER LLC
BUILDING OWNER ADDRESS:	951 BEAVER DAM RD. STRATFORD, CT 06614
APPLICANT:	T-MOBILE NORTHEAST, LLC. 35 GRIFFIN RD S BLOOMFIELD, CONNECTICUT 06002
APPLICANT PHONE:	(860) 692-7100

PROJECT DIRECTORY

ENGINEERING FIRM:
CENTERLINE COMMUNICATIONS
750 WEST CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
DEREK CREASER (617) 306-3034

CARRIER:
T-MOBILE NORTHEAST, LLC.
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
PHONE: (860) 692-1700

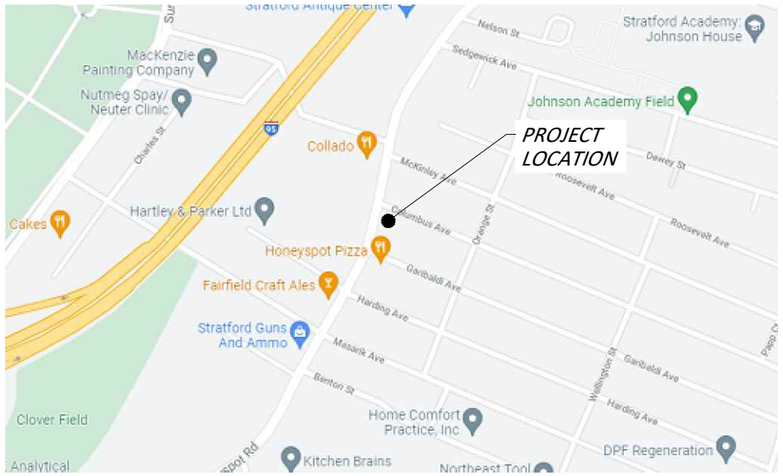
811 Know what's **below.** **Call** before you dig.

CENTERLINE COMMUNICATIONS

T - Mobile NORTHEAST LLC

SITE NAME: CTFF899A
SITE ID: CTFF899A
ADDRESS: 623-627 HONEYSPOT ROAD
STRATFORD, CT 06615

TECHNOLOGY: 67E5A998E 6160
MODIFICATION: REPLACEMENT_CONSOLIDATION



VICINITY MAP
NOT TO SCALE

N

LOCATION MAP
NOT TO SCALE

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T–MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSE OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T–MOBILE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SCOPE OF WORK

1. INSTALL NEW ANTENNA PLATFORM MOUNT
2. INSTALL NINE NEW ANTENNAS
3. INSTALL SIX NEW RRUs
4. INSTALL THREE NEW 6x24 HYBRID CABLES
5. REMOVE THREE EXISTING EQUIPMENT CABINETS
6. INSTALL NEW 6160 EQUIPMENT CABINET
7. INSTALL NEW B160 BATTERY CABINET
8. REMOVE ALL UNUSED CABLES AND EQUIPMENT
9. INSTALL NEW FORTRESS QUAD–PLATFORM MOUNT WITH HANDRAIL KIT

DRAWING INDEX

NO.	DESCRIPTION
T–1	TITLE SHEET
GN–1	GENERAL NOTES, RF NOTES, CABLING NOTES
A–1	COMPOUND PLAN
A–2	EQUIPMENT PLAN
A–3	DETAILS
A–4	SOUTHEAST ELEVATION
A–5	ANTENNA LAYOUT
SN–1	STRUCTURAL NOTES & SPECIAL INSPECTIONS
S–1	ANTENNA & RRU MOUNTING DETAILS
G–1	GROUNDING & ONE LINE DIAGRAM

DRAWING SCALE NOTES:

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 22"x34". CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

T - Mobile NORTHEAST LLC
T-MOBILE NORTHEAST, LLC.
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
PHONE: (860) 629-1700

CENTERLINE COMMUNICATIONS
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
1	10/29/21	RFDS REVISION	NT
0	10/13/21	ISSUED FOR CONSTRUCTION	SS
A	10/05/21	ISSUED FOR REVIEW	TRP

DESIGNED BY:	APPROVED BY:
TRP	WRD

STATE OF CONNECTICUT
DEREK J. CREASER
No. 27551
LICENSED PROFESSIONAL ENGINEER

DATE: 10/19/2021

SITE NAME: CTFF899A

SITE ID: CTFF899A

SITE ADDRESS: 623-627 HONEYSPOT ROAD
STRATFORD, CT 06615
FAIRFIELD COUNTY

SHEET TITLE: TITLE SHEET

DRAWING: T-1

RF NOTES

1. ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY SUBCONTRACTOR
2. THE DESIGN IS BASED ON RF DATA SHEETS, SIGNED AND APPROVED.
3. RADIO SIGNAL CABLE AND RACEWAY SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC, NFPA 70), CHAPTER 8.
4. ALL SPECIFIED MATERIAL FOR EACH LOCATION (E.G. OUT DOORS-OCCUPIED, INDOORS-UNOCCUPIED, PLENUMS, RISER SHAFTS, ETC.) SHALL BE APPROVED, LISTED, OR LABELED AS REQUIRED BY THE NEC.
5. RADIO SIGNAL CABLE SHALL BE SUPPORTED AT MINIMUM OF EVERY THREE (3) FEET EXCEPT INSIDE MONOPOLES OR MONOPOLES WHERE CABLE AND CONNECTOR MANUFACTURERS SUPPORT RECOMMENDATIONS SHALL BE FOLLOWED. MANUFACTURER RECOMMENDATION CABLES SUPPORT ACCESSORIES SHALL BE USED.
6. THE OUTDOOR CABLE SUPPORT SYSTEM SHALL BE PROVIDED WITH AN ICE SHIELD TO SUPPORT AND PROTECT ANTENNA CABLE RUNS.
7. DRIP LOOPS SHALL BE REQUIRED ON ALL OUTSIDE CABLES. CABLES SHALL BE SLOPED AWAY FROM BUILDING OR OUTDOOR BTS CABINETS TO PREVENT WATER FROM ENTERING THROUGH THE COAXIAL CABLE PORT.
8. ALL FEEDER LINE AND JUMPER CONNECTORS SHALL BE 7/16 DIN CABLE CONNECTORS THAT MEET IP68 STANDARDS.
9. 7/16 DIN CONNECTORS REQUIRE NO ADDITIONAL WEATHER PROOFING IN INDOOR APPLICATIONS IF INSTALLED AND TORQUED PROPERLY. IN OUTDOOR APPLICATIONS WEATHER PROOFING IS REQUIRED AND THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED.
10. USING WEATHERPROOFING KIT APPROVED BY CABLE MANUFACTURER AND CONTRACTOR START TAPE APPROXIMATELY 5 INCHES FROM THE CONNECTOR, AND WRAP 2 INCHES TOWARD THE CONNECTOR, THEN REVERSE THE TAPE SO THAT THE STICKY SIDE IS UP. TAPE OVER THE CONNECTOR OR SURGE ARRESTOR UNTIL THREE (3) TO FOUR (4) INCHES BEYOND THE CONNECTOR AND REVERSE AGAIN WITH THE STICKY SIDE DOWN FOR ANOTHER INCH OR TWO. PASS THE BUTYL RUBBER AND FINISH WITH A FINAL LAYER OF TAPE.
11. ANTENNAS SHALL BE PAINTED,WHEN REQUIRED, BY THE LANDLORD OR AUTHORITY OF HAVING JURISDICTION IN ACCORDANCE WITH ANTENNA MANUFACTURERS' SURFACES PREPARATION AND PAINTING REQUIREMENTS.
12. CABLE SHIELDS AND TOWER CONDUITS SHALL BE GROUNDED AT THE TOP OF THE TOWER WITHIN 10 FEET OF THEIR CONNECTORS, AND AT THE BOTTOM OF THE TOWER ABOUT 6 INCHES BEFORE THEY TURN TOWARD THE FACILITY. THEY SHALL BE GROUNDED AT THE MIDPOINT OF THE TOWERS THAT ARE BETWEEN 60 FEET AND 200 FEET HIGH, AND AT INTERVALS OF 60 FEET OR LESS ON TOWERS THAT ARE HIGHER THAN 200 FEET.

ANTENNA CABLE & SCHEDULING NOTES

1. SUBCONTRACTOR SHALL VERIFY THE ACTUAL LENGTH IN THE FIELD BEFORE INSTALLATION.
2. TAG AND COLOR CODE ALL MAIN CABLES AT LOCATIONS PER T-MOBILE ANTENNA CABLE MARKING STANDARD:
   - TOP OF TOWER END OF MAIN COAX
   - BOTTOM OF TOWER END OF MAIN COAX
   - DIRECTLY BEFORE AND AFTER RF EQUIPMENT
   - END OF JUMPERS AT BTS EQUIPMENT
3. ANTENNAS SHALL BE PROCURED AND INSTALLED WITH DOWN TILT MOUNTING BRACKETS SUPPLIED BY ANTENNA MANUFACTURER.
4. PRIOR APPROVAL IS REQUIRED BEFORE PERFORMING ANY WORK ON EXISTING CELL SITE EQUIPMENT.

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR - CENTERLINE COMMUNICATIONS
   SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER - T-MOBILE MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE MOBILITY SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE: IBC 2015 & CONNECTICUT STATE BUILDING CODE 2018
ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
LIGHTNING CODE: NFPA 70-2017

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		

T - Mobile
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CENTERLINE COMMUNICATIONS
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
1	10/29/21	RFDS REVISION	NT
0	10/13/21	ISSUED FOR CONSTRUCTION	SS
A	10/05/21	ISSUED FOR REVIEW	TRP

DESIGNED BY:	APPROVED BY:
TRP	WRD

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 10/19/2021

SITE NAME: CTFF899A

SITE ID: CTFF899A

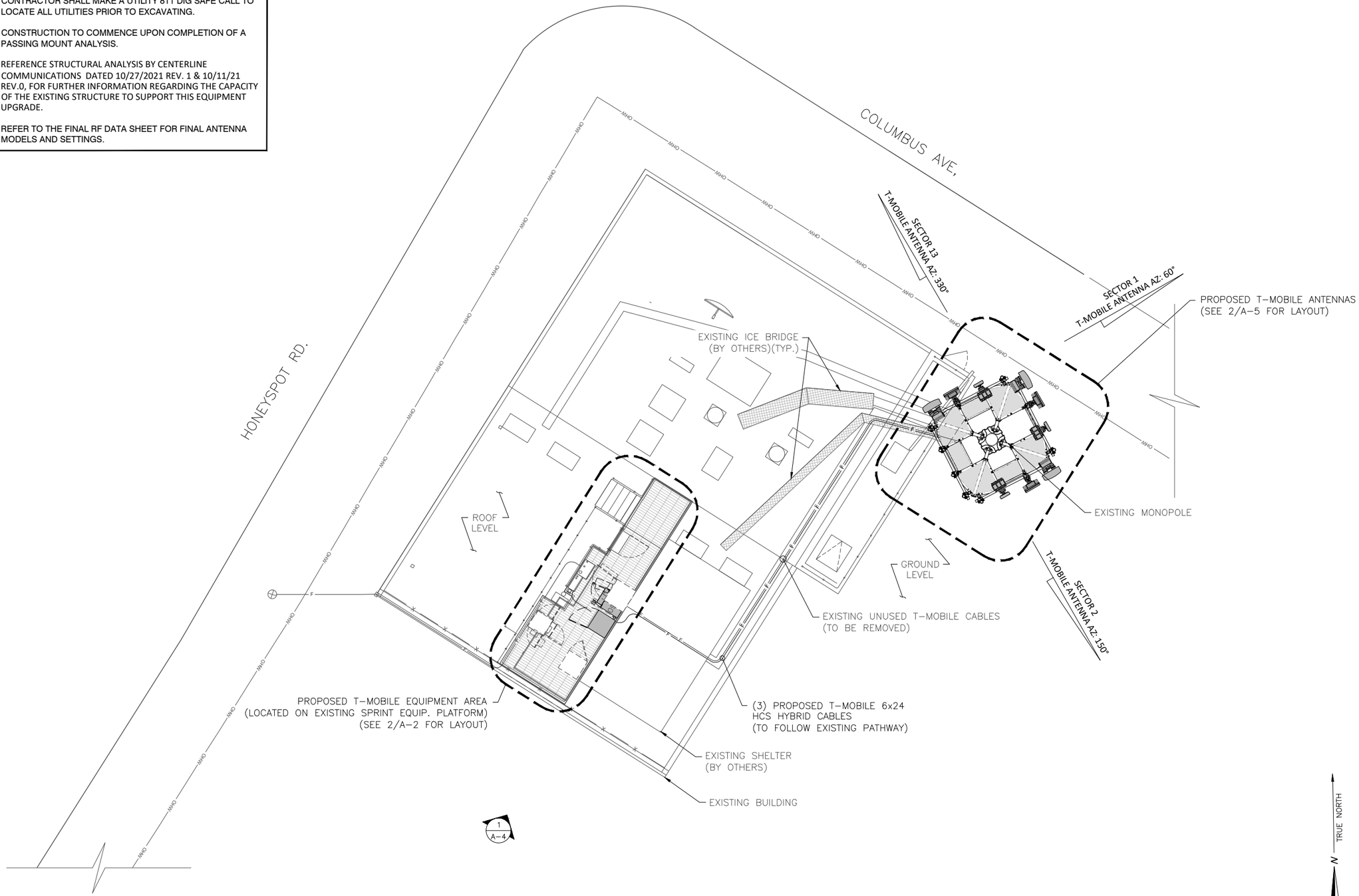
SITE ADDRESS:
623-627 HONEYSPOT ROAD
STRATFORD, CT 06615
FAIRFIELD COUNTY

SHEET TITLE: GENERAL NOTES, RF NOTES, CABLING NOTES

DRAWING: GN-1

NOTES

1. CONTRACTOR SHALL MAKE A UTILITY 811 DIG SAFE CALL TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
2. CONSTRUCTION TO COMMENCE UPON COMPLETION OF A PASSING MOUNT ANALYSIS.
3. REFERENCE STRUCTURAL ANALYSIS BY CENTERLINE COMMUNICATIONS DATED 10/27/2021 REV. 1 & 10/11/21 REV.0, FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
4. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA MODELS AND SETTINGS.



1 / A-1 COMPOUND PLAN

GRAPHIC SCALE

8 4 0 1 2 4 8

3/16 INCH = 1 FOOT (22X34)
3/32 INCH = 1 FOOT (11X17)

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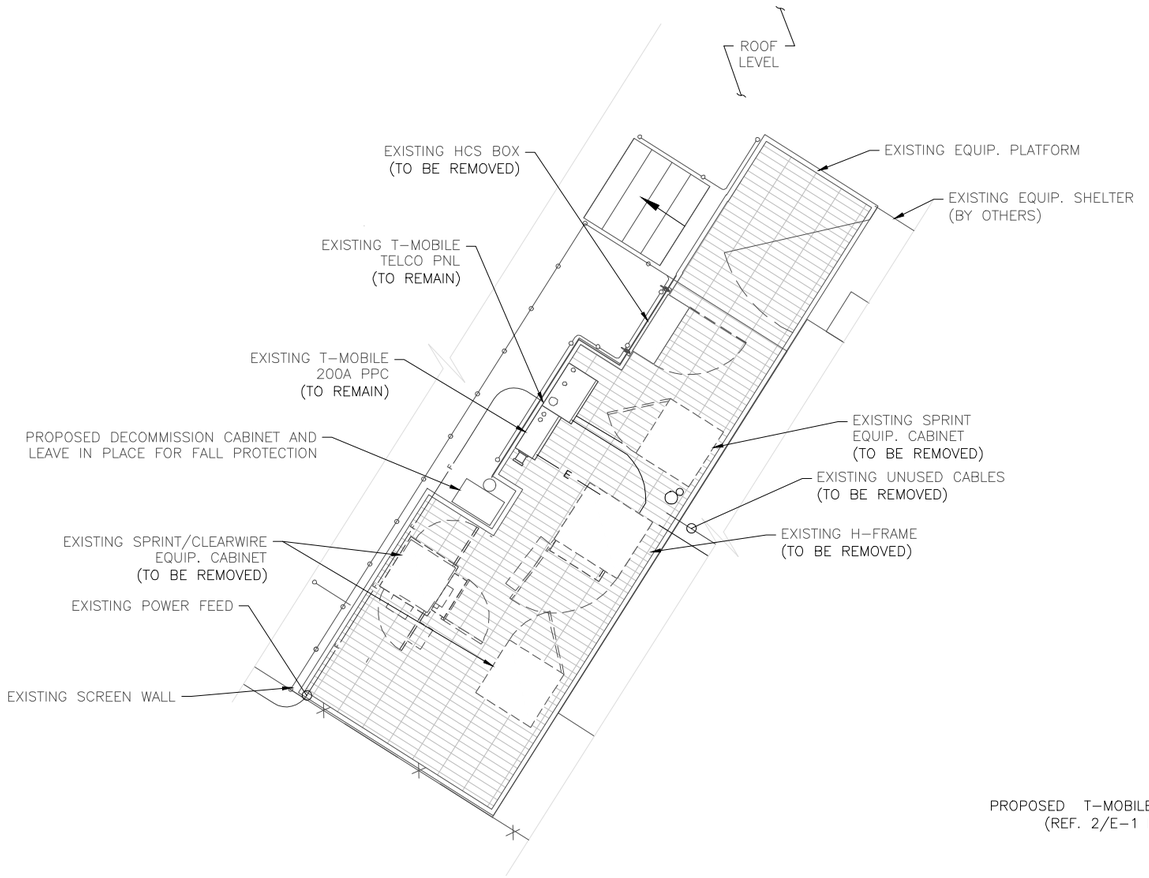
FAIRFIELD COUNTY

SHEET TITLE: COMPOUND PLAN

DRAWING: A-1

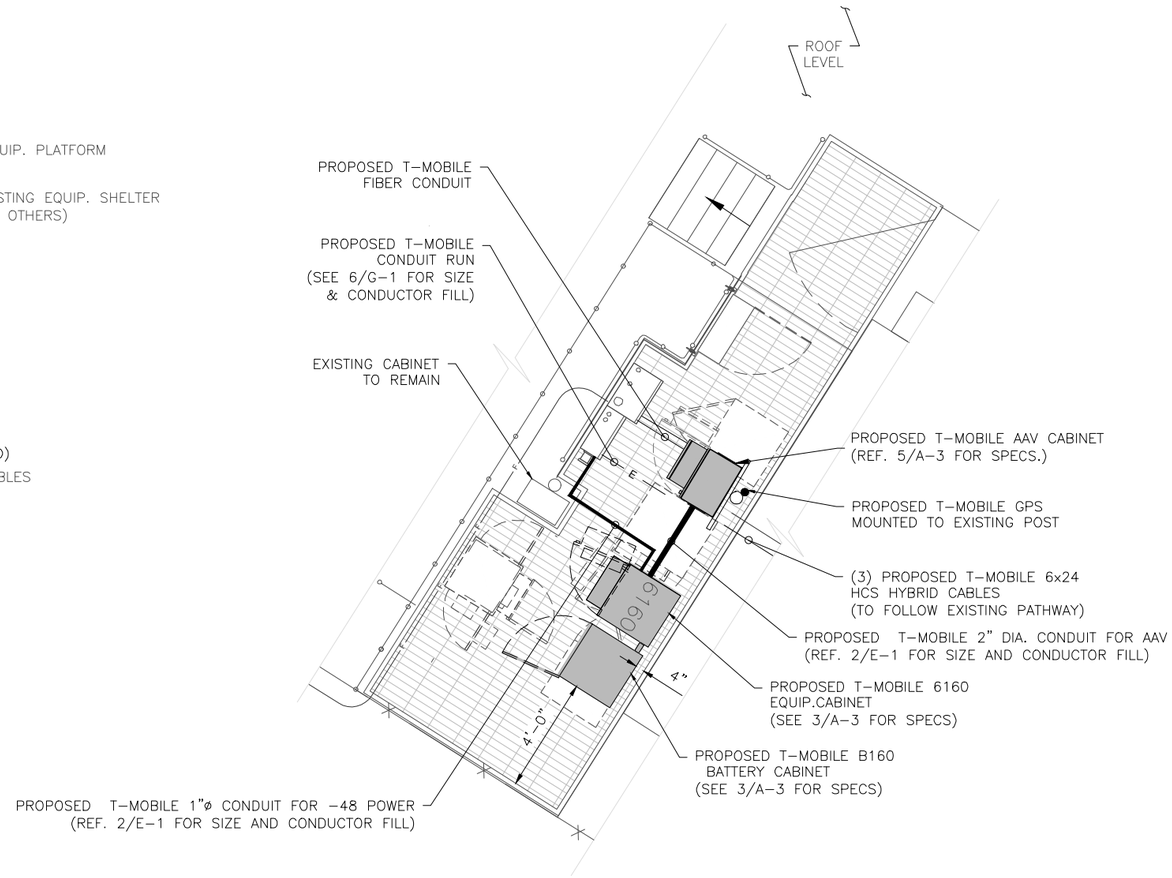


1 A-2 EXISTING EQUIPMENT PLAN

GRAPHIC SCALE

4 0 1 2 4 8

3/8 INCH = 1 FOOT (22X34)
3/16 INCH = 1 FOOT (11X17)



2 A-2 PROPOSED EQUIPMENT PLAN

GRAPHIC SCALE

4 0 1 2 4 8

3/8 INCH = 1 FOOT (22X34)
3/16 INCH = 1 FOOT (11X17)

TRUE NORTH

N

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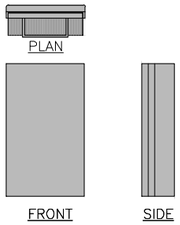
FAIRFIELD COUNTY

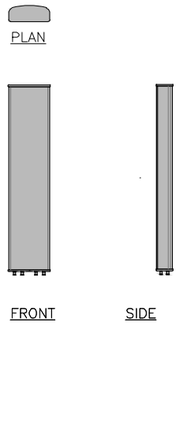
SHEET TITLE: EQUIPMENT LAYOUT

DRAWING: A-2

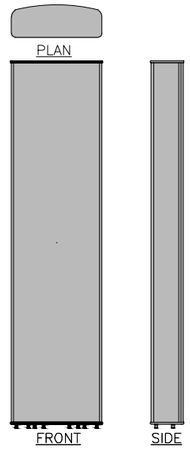
ERICSSON AIR 6449 B41	
MODEL #	AIR 6449 B41
MANUF.	ERICSSON
HEIGHT	33.1"
WIDTH	20.6"
DEPTH	8.6"
WEIGHT	104.0 LBS
FRONT EPA:	5.01 FT^2
SIDE EPA:	2.09 FT^2



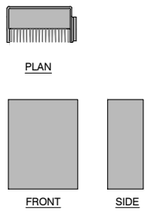
COMMSCOPE VV-65A-R1	
MODEL #	VV-65A-R1
MANUF.	COMMSCOPE
HEIGHT	54.7"
WIDTH	12.1"
DEPTH	4.6"
WEIGHT	23.81 LBS W/O MTG HARDWARE 32.41 LBS W/ MTG HARDWARE
FRONT EPA:	4.06 FT^2
SIDE EPA:	1.75 FT^2



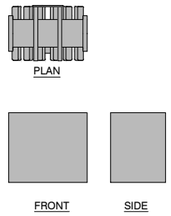
RFS APXVAALL24_43-U-NA20	
MODEL #	APXVAALL24_43-U-NA20
MANUF.	RFS
HEIGHT	95.9"
WIDTH	24.0"
DEPTH	8.5"
WEIGHT	128 LBS W/O MTG HARDWARE 153.3LBS W/ MTG HARDWARE
FRONT EPA:	15.98 FT^2
SIDE EPA:	5.66 FT^2



1 A-3 ANTENNA DETAILS

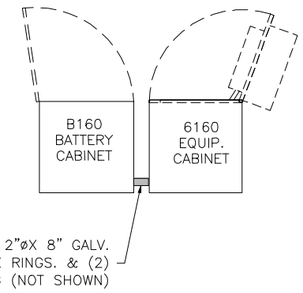


RADIO DIMENSIONS	
MODEL #	RADIO 4480 B66
MANUF.	ERICSSON
HEIGHT	19.5"
WIDTH	15.1"
DEPTH	7.8"
WEIGHT	87 LBS

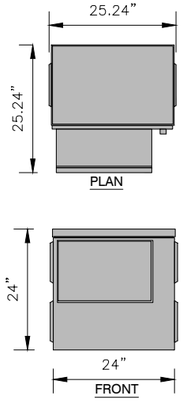


RADIO DIMENSIONS	
MODEL #	RADIO 4460 B25_B66
MANUF.	ERICSSON
HEIGHT	15.1"
WIDTH	17.0"
DEPTH	11.9"
WEIGHT	108 LBS

2 A-3 RADIO DETAILS



4 A-3 PROPOSED EQUIPMENT CONDUIT DETAIL



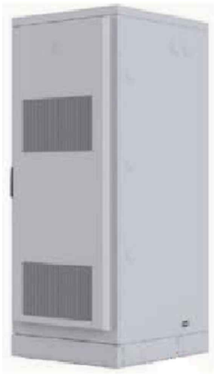
AAV CABINET	
MODEL #	NETXTEND 2416
MANUF.	EMERSON
HEIGHT	24.0"
WIDTH	24.0"
DEPTH	16.67"
WEIGHT	64 LBS/100 LBS with (4) BATTERIES

5 A-3 AAV CABINET DETAIL

6160 AC ENCLOSURE

CAPACITY	
RACK SPACE USER EQUIP.	19U(19" RACK)
HARDWARE CAPABILITIES	POWER AND CPRI SUPPORT FOR MULTI-STANDARD REMOTE RADIOS (RRU OR AIR) ERS BASEBAND AND TRANSPORT UNITS Li-ION BATTERIES 3PP EQUIPMENT ADDITIONAL POWER FEED OPTIONS AVAILABLE
MECHANICAL SPECIFICATIONS	
WEIGHT	320lbs (INCLUDING ACTIVE EQUIPMENT)
DIMENSIONS (HWD)	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MOUNTING POSITION	GROUND
ENCLOSURE MATERIAL	ALUMINUM
COLOR	POWDER PAINT NCS 2002-B
DOOR	FRONT ACCESS
RACK TYPE	19" (IEC 60297-3-100)
LOCK TYPE	CYLINDER/PAD LOCK
POWER SYSTEM	
INPUT VOLTAGE	3P+N+PE 346/200-415/240 VAC 2P+N+PE 208/120-220/127 VAC 1P+N+PE 200-250 VAC

B160 BATTERY ENCLOSURE



CAPACITY	
VRLA12V:	100Ah/150Ah/170Ah/190Ah/210Ah
Li-ION	24U 19"/23"
SODIUM-NICKEL	3xFIAMM
ELECTRICAL SPECIFICATIONS	
DC OUTPUT	-48VDC/200A
BATTERY BREAKERS	2x125/2p
ALARMS	DOOR OPEN, CLIMATE FAILURE, MCB CONNECTION
MECHANICAL SPECIFICATIONS	
WEIGHT	295 lbs (PLUS 3 STRINGS OF RECOMMENDED 190 aHR FOR ADDITIONAL 1588LBS)
DIMENSIONS (HWD)	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MATERIAL	GALVANIZED STEEL (180g/m^2)
COLOR	POWDER PAINT NCS 2002-B
LOCKING TYPE	CYLINDER/PAD LOCK

3 A-3 PROPOSED EQUIPMENT CABINET SPECIFICATIONS

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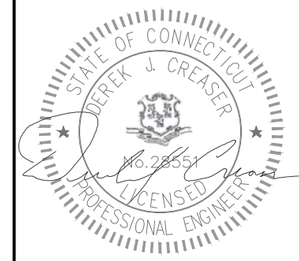


DATE: 10/19/2021

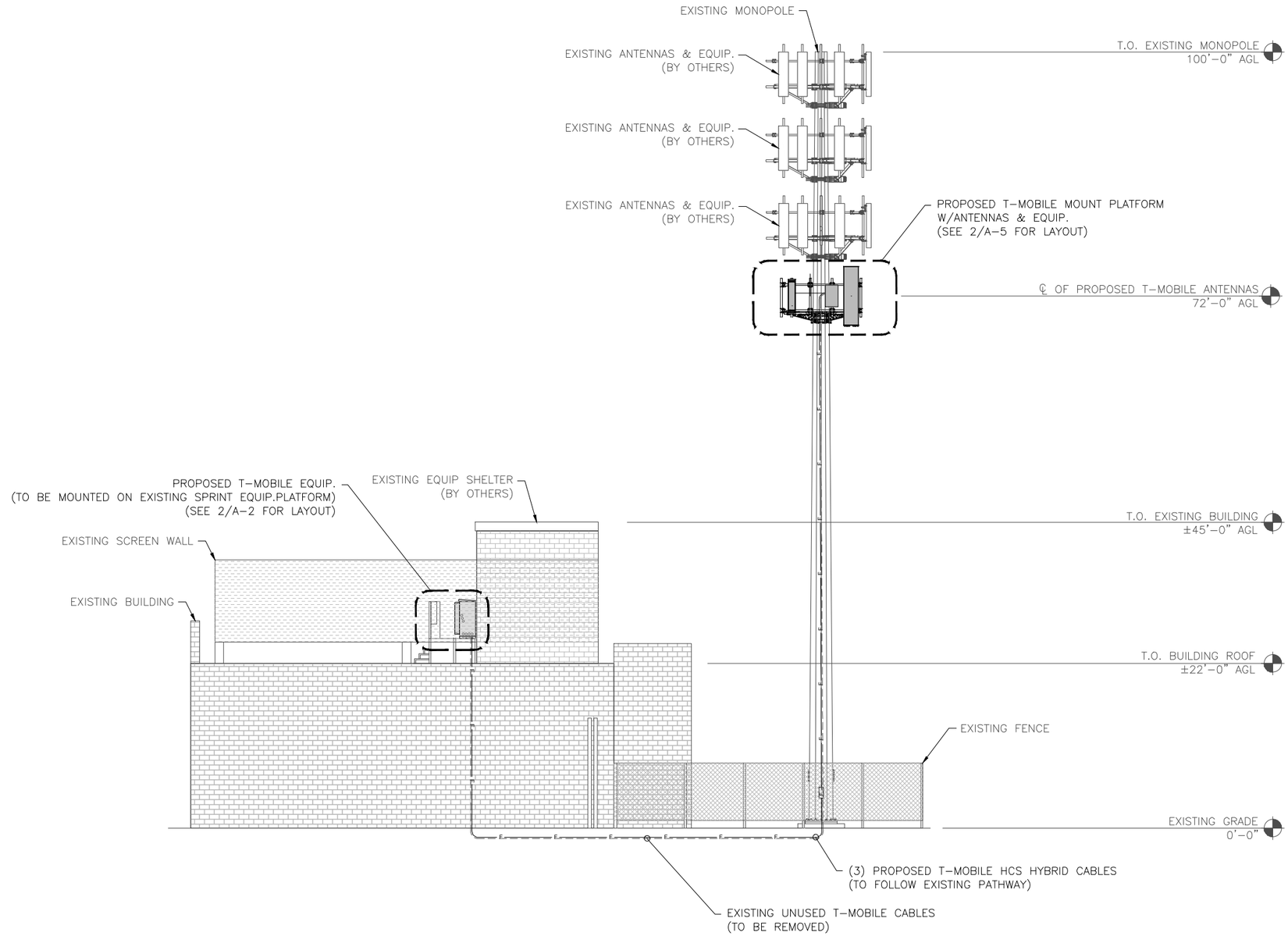
SITE NAME: CTFF899A

SITE ID: CTFF899A

SITE ADDRESS:
623-627 HONEYSPOT ROAD
STRATFORD, CT 06615
FAIRFIELD COUNTY

SHEET TITLE: EQUIPMENT DETAILS

DRAWING: A-3



1 / A-4 SOUTHWEST ELEVATION

GRAPHIC SCALE

16 8 0 1 2 4 8 16

1/8 INCH = 1 FOT (22X34)
1/16 INCH = 1 FOOT (11X17)

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STATE OF CONNECTICUT
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No. 28551
LICENSED PROFESSIONAL ENGINEER

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STRATFORD, CT 06615
FAIRFIELD COUNTY

SHEET TITLE: SOUTHWEST ELEVATION

DRAWING: A-4

TRUE NORTH

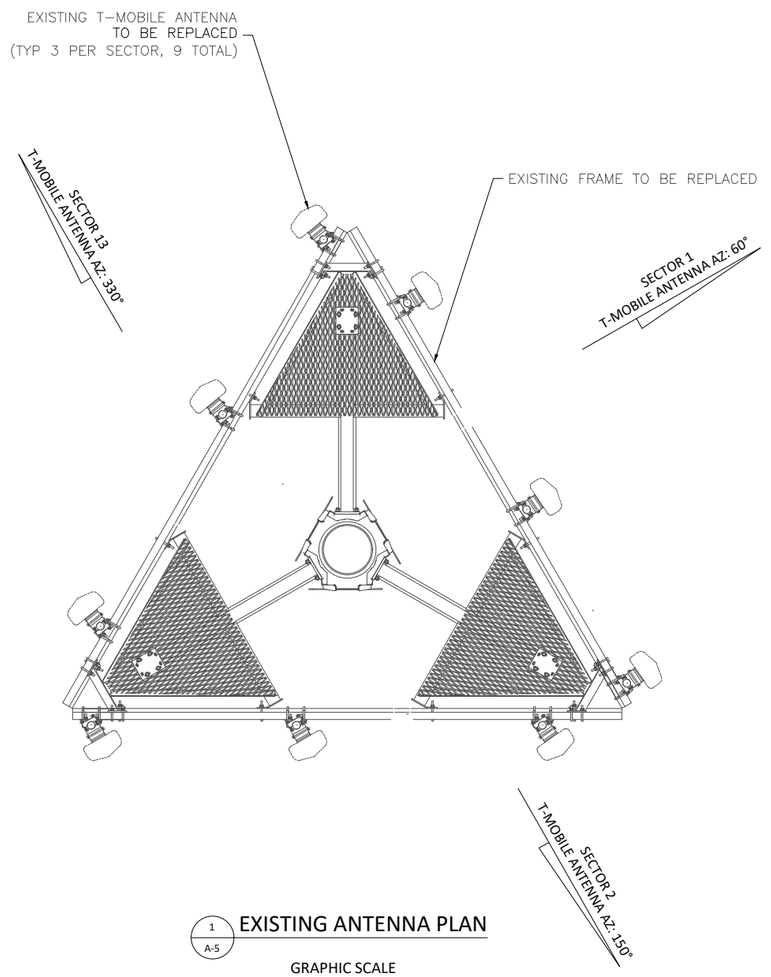
N

ANTENNA & CABLE NOTES:

1. REFERENCE MOUNT ANALYSIS BY CENTERLINE COMMUNICATIONS DATED 10/27/2021 REV. 1 & 10/11/2021 REV.0, FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
2. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.
3. REMOVE ALL UNUSED CABLE, RRUs AND TMAs.

ANTENNA & CABLE SCHEDULE:

	LOCATION	AZIMUTH	RAD CENTER	STATUS	TECHNOLOGY	ANTENNA MODEL NO.	MECH DOWNTILT	ELEC DOWNTILT	CABLES	DIPLEXERS	TMA/RRU	CABLE SIZE	CABLE LENGTH
ALPHA	A-1	60°	72'-0"	PROPOSED	L700, L600, N600	APXVAALL24_43-U-NA20	0°	0°	(2) COAX JUMPERS	---	RRU-4480 B71-B85	6x24 HYBRID	350'
	A-2	60°	72'-0"	PROPOSED	L2500, N2500	AIR6449 B41	0°	0°	--	---	---	SHARED	N/A
	A-3	60°	72'-0"	PROPOSED	L2100, L1900, G1900	COMMSCOPE_VV-65A-R1	0°	0°	(4) COAX JUMPERS	---	RRU-4460 B25-B66	SHARED	N/A
BETA	B-1	150°	72'-0"	PROPOSED	L700, L600, N600	APXVAALL24_43-U-NA20	0°	0°	(2) COAX JUMPERS	---	RRU-4480 B71-B85	6x24 HYBRID	350'
	B-2	150°	72'-0"	PROPOSED	L2500, N2500	AIR6449 B41	0°	0°	---	---	---	SHARED	N/A
	B-3	150°	72'-0"	PROPOSED	L2100, L1900, G1900	COMMSCOPE_VV-65A-R1	0°	0°	(4) COAX JUMPERS	---	RRU-4460 B25-B66	SHARED	N/A
GAMMA	C-1	330°	72'-0"	PROPOSED	L700, L600, N600	APXVAALL24_43-U-NA20	0°	0°	(2) COAX JUMPERS	---	RRU-4480 B71-B85	6x24 HYBRID	350'
	C-2	330°	72'-0"	PROPOSED	L2500, N2500	AIR6449 B41	0°	0°	---	---	---	SHARED	N/A
	C-3	330°	72'-0"	PROPOSED	L2100, L1900, G1900	COMMSCOPE_VV-65A-R1	0°	0°	(4) COAX JUMPERS	---	RRU-4460 B25-B66	SHARED	N/A
NOTE: DARK TEXT IN TABLE ABOVE DENOTES PROPOSED EQUIPMENT											(3) TOTAL 6x24 HCS HYBRID CABLES		1150'



1 A-5 EXISTING ANTENNA PLAN

GRAPHIC SCALE

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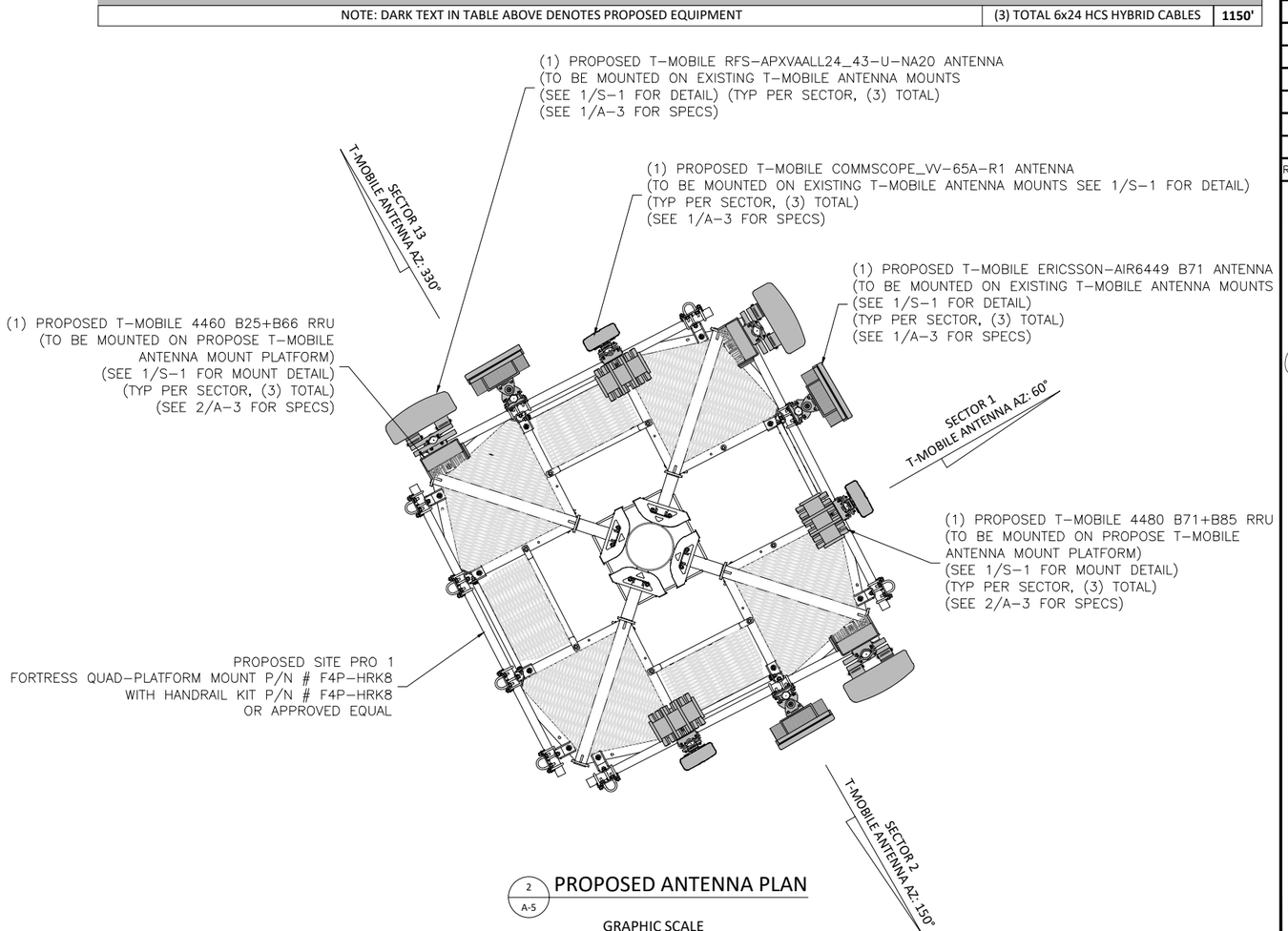
1/4 INCH = 1 FOOT (11X17)



2 A-5 PROPOSED ANTENNA PLAN

GRAPHIC SCALE

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1/2 INCH = 1 FOOT (22X34)
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LICENSED PROFESSIONAL ENGINEER

DATE: 10/19/2021

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SITE ID: CTFF899A

SITE ADDRESS: 623-627 HONEYSPOT ROAD STRATFORD, CT 06615 FAIRFIELD COUNTY

SHEET TITLE: ANTENNA PLAN & SCHEDULE

DRAWING: A-5

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	**MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]**
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	**PHOTOGRAPHS**
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

NOTES:

1. ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
2. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
3. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
4. VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
5. CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
6. EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

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CENTERLINE COMMUNICATIONS

750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
1	10/29/21	RFDS REVISION	NT
0	10/13/21	ISSUED FOR CONSTRUCTION	SS
A	10/05/21	ISSUED FOR REVIEW	TRP

DESIGNED BY:	APPROVED BY:
TRP	WRD

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 10/19/2021

SITE NAME: CTFF899A

SITE ID: CTFF899A

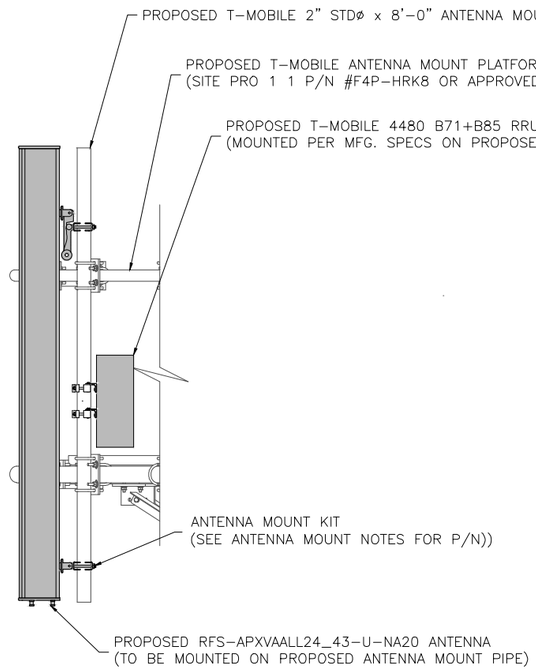
SITE ADDRESS: 623-627 HONEYSPOT ROAD
STRATFORD, CT 06615
FAIRFIELD COUNTY

SHEET TITLE: STRUCTURAL NOTES & SPECIAL INSPECTIONS

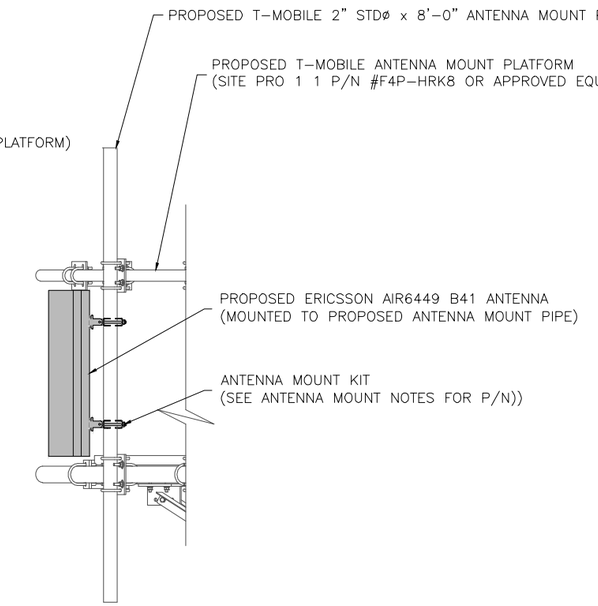
DRAWING: SN-1

ANTENNA MOUNT NOTES:

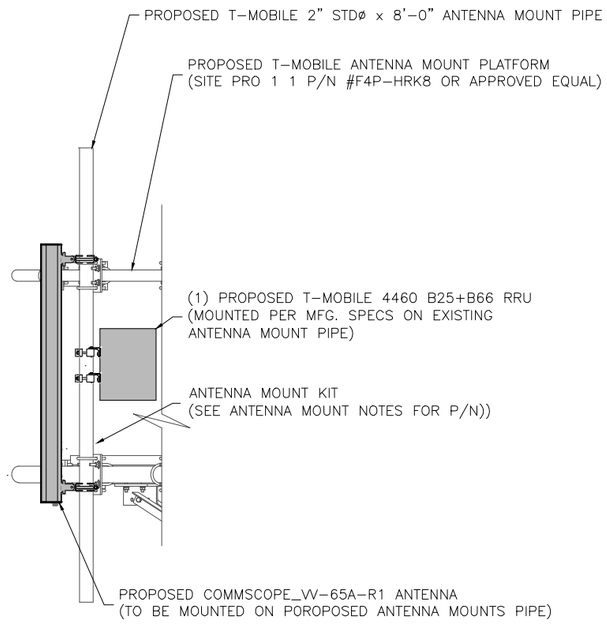
1. AIR6449: ERICSSON R2A PIPE MOUNT KIT
2. APXVAARR24-43-U-NA20: APM40-5E PIPE MOUNT KIT
3. APX16DVW-16SVW-S-E-A20: APM40-5E PIPE MOUNT KIT



POSITION A–1, B–1, & C–1



POSITION A–2, B–2, & C–2



POSITION A–3, B–3, & C–3

1 / S-1 TYPICAL ANTENNA & RRU MOUNTING DETAIL

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TRP	WRD

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SITE NAME:
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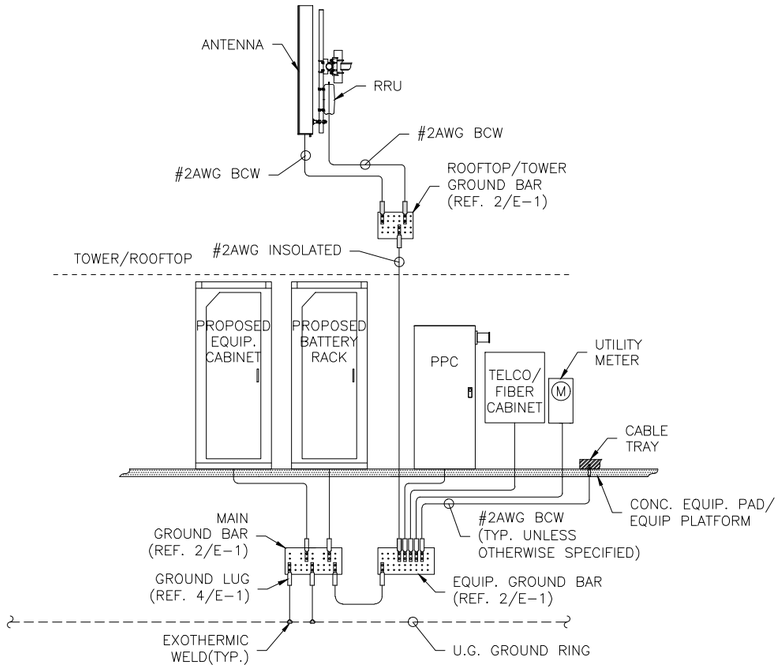
SITE ADDRESS:
623-627 HONEYSPOT ROAD
STRATFORD, CT 06615
FAIRFIELD COUNTY

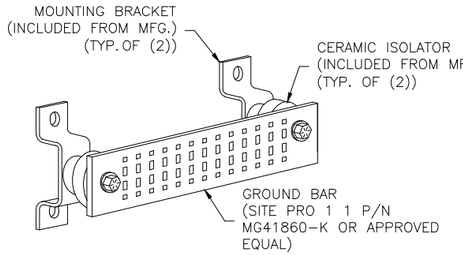
SHEET TITLE:
ANTENNA & RRU MOUNTING DETAILS

DRAWING:
S-1



GROUNDING RISER NOTE:
UNLESS OTHERWISE SPECIFIED ALL GROUNDING CONDUCTORS ARE TO BE #2AWG BCW

1 / G-1 GROUNDING RISER DIAGRAM



2 / G-1 GROUND BAR DETAIL

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

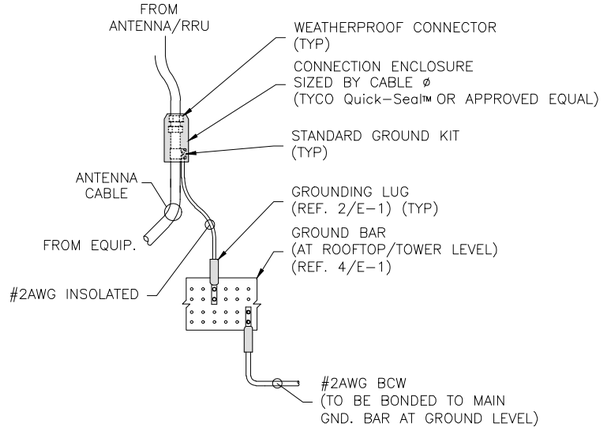
SECTION "P" – SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

SECTION "A" – SURGE ABSORBERS

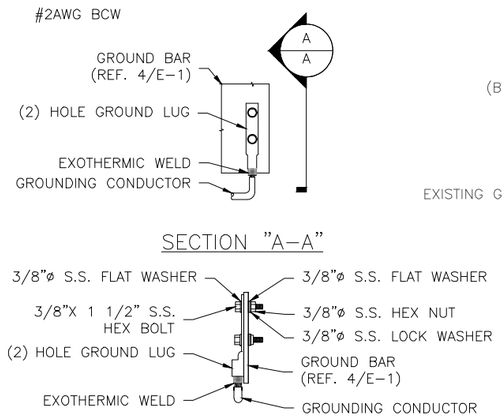
INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

3 / G-1 GROUND WIRE SCHEDULE



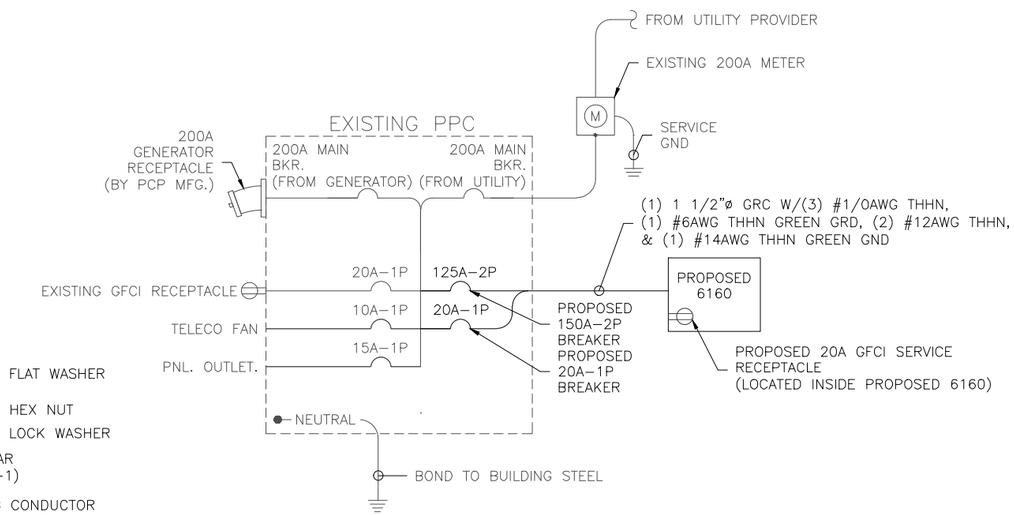
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT BEND IN CABLE.
2. GROUND CABLES DIRECTLY TO CIGBE
3. JUMPER REQUIRED ONLY WHEN CABLE IS 1 1/4" OR LARGER

4 / G-1 ANTENNA/RRU GROUNDING DETAIL



GROUNDING LUG NOTES:
1. DO NOT DOUBLE UP OR STACK LUGS.
2. OXIDE INHIBITING COMPOUND TO BE APPLIED TO ALL LUGS.
3. ALL LUGS ARE TO BE EXOTHERMIC WELDED TO GROUNDING CONDUCTORS.
4. FOR INSOLATED GROUNDING CONDUCTORS, EXPOSED BARE COPPER TO BE KEPT TO ABSOLUTE MINIMUM.
5. NO INSULATION IS ALLOWED WITHIN THE BARREL OF THE COMPRESSION TERMINAL.

5 / G-1 GROUND LUG DETAIL



6 / G-1 ONE LINE DIAGRAM

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PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
1	10/29/21	RFDS REVISION	NT
0	10/13/21	ISSUED FOR CONSTRUCTION	SS
A	10/05/21	ISSUED FOR REVIEW	TRP

DESIGNED BY:	APPROVED BY:
TRP	WRD

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED
PROFESSIONAL ENGINEER

DATE: 10/19/2021

SITE NAME: CTFF899A

SITE ID: CTFF899A

SITE ADDRESS:
623-627 HONEYSPOT ROAD
STRATFORD, CT 06615
FAIRFIELD COUNTY

SHEET TITLE: GROUNDING & ONE LINE DIAGRAM

DRAWING: G-1

Exhibit D

Structural Analysis Report

CENTERLINE COMMUNICATIONS
750 West Center Street, Suite 301
West Bridgewater, MA 02379
781.713.4725

Revised Structural Analysis Report

Site ID: CTFF899A
Site Name: CTFF899A
Project Name: Sprint Retain
Address: 623-627 Honeyspot Rd
Stratford, CT 06615

Client:

T - Mobile
NORTHEAST, LLC
35 Griffin Rd S
Bloomfield, CT 06002

Date: 10/27/2021 Rev. 1
10/11/2021 Rev. 0

STATE OF CONNECTICUT
DEREK J. CREASER
LICENSED
PROFESSIONAL ENGINEER

Digitally signed by: Derek J. Creaser, P.E.
DN: CN = Derek J. Creaser, P.E. email = dcreaser@clinellc.com C = US O = Centerline Communications OU = Director - A&E Services
Date: 2021.10.28 13:49:19 -04'00'

Scope of Work:

Centerline Communications was authorized by T-Mobile Northeast LLC to perform an analysis of the existing 102.92 ft. monopole to determine its capacity to support the proposed and existing T-Mobile equipment listed in this report.

Existing & Proposed Equipment:

Carrier	Mounting Level (ft)	Center Line Elevation (ft)	Number of Appurtenances	Antenna Manufacturer	Appurtenance Model	Feed Lines (in)
-	101.0	101.0	3	-	5' Sector Frame	-
AT&T	90.0	90.0	6	CCI	TPX-070821	(12) 7/8
			3	Ericsson	RRUS 11 B12	
			3	Ericsson	RRUS 32	
			3	Ericsson	RRUS 32 B2	
			3	Ericsson	RRUS 4426 B66	
			3	Ericsson	RRUS 4478 B14	
			6	Kaelus	DBC0061F1V51-2	
			3	Kathrein	80010965	
			3	KMW	AM-X-CD-16-65-00T-RET	
			1	-	8' Ladder	
			1	Rohn	14' Platform	
			3	Powerwave	7770	
			6	Powerwave	LGP 17201	
			3	Quintel	QS66512-2	
			3	Raycap	DC6-48-60-18-85	
Verizon	82.0	82.0	3	Amphenol	BXA-70063-6CF-EDIN-X	(2) 1-5/8 (6) 7/8
			6	JMA	MX06FRO660-03	
			1	-	8' Ladder	
			1	-	14' Platform	
			2	RFS	DB-B1-6C-12AB-0Z	
			3	Samsung	B2/B66a RRH-BR049	
			3	Samsung	B5/B13 RRH-BR04C	
			3	Samsung	VZS01	
T-Mobile	72.0	72.0	**3**	**RFS**	**APXVAALL24_43-U-NA20**	**(3) 6x24 Hybrid**
			3	**Ericsson**	**AIR6449 B41**	
			3	**Commscope**	**VV-65A-R1**	
			3	**Ericsson**	**RRUS 4480 B71+B85**	
			3	**Ericsson**	**RRUS 4460 B25+B66**	
			1	**Site Pro 1**	**F4P-8W Mount w/ Handrails**	

-	28.0	42.0	1	-	20’ x 3” Omni	(1) 1-1/4 (8) 1/2
		36.0	2	-	10’ x 3” Omni	
		34.0	3	-	10’ x 3” Omni	
		30.0	1	-	GPS	
		28.0	1	-	14’ T-Arm	
		28.0	2	-	5’ Sector Frame	

*Note: Proposed equipment shown in **bold**.*

Design Criteria:

Design Codes:
2018 Connecticut State Building Code
2015 International Building Code
ASCE 7-10
TIA-222-G Standards

Ultimate Wind Speed	125 mph
Wind Speed with Ice	50 mph
Ice Thickness	0.75 in.
Exposure Category	C
Topographic Category	1
Risk Category	II
Site Soil Class (Assumed)	D-Stiff Soil
Seismic Design Category	B
Spectral Response Acceleration Parameter at a Short Periods, S_S	0.201 g
Spectral Response Acceleration Parameter at a Period of 1 Second, S_1	0.064 g
Short Period Site Coefficient, F_a	1.6
Long Period Site Coefficient, F_v	2.4

***Refer to calculations for additional design criteria.**

Conclusion:

Tower Section Capacity (Summary)

Section No.	*Elevation ft*	*Component Type*	*Size*	*Critical Element*	*P lb*	*øP$_{allow}$ lb*	*% Capacity*	*Pass Fail*
L1	102.92 - 90	Pole	TP13x13x0.25	1	-631	315436	6.5	Pass
L2	90 - 45.08	Pole	TP26.7925x13x0.25	2	-17605	1249440	82.5	Pass
L3	45.08 - 0	Pole	TP40x25.1134x0.3125	3	87138	2302850	57.6	Pass
L3	62.5 - 32.25	Reinforcing	4x1 1/4	8	-162891	192094	84.8	Pass
	32.25 - 0	Reinforcing	4.25 x 1.25	5	-203088	204100	99.5	Pass
							Summary	
						Pole (L2)	82.5	Pass
						Reinforcing (L3)	99.5	Pass
						RATING =	**99.5**	**Pass**

Structure Rating (max from all components) =	**99.5%**

Foundation Analysis Results (Summary)

Component	Rating	Pass/Fail
Anchor Rod	51.0%	**Pass**
Base Plate	62.8%	**Pass**
Foundation – Soil Rating	33.5%	**Pass**
Foundation – Structural Rating	49.1%	**Pass**

Foundation Rating (max from all components) =	**62.8%**

Recommendations:

The existing tower has sufficient capacity to support the existing and proposed loading for the final loading configuration. Modifications to the tower structure are not required.

Reference Documents:

- T-Mobile RFDS CTFF899A_Sprint Retain_1, dated October 14, 2021
- Site Photos and Notes by Centerline Communications, dated August 5, 2021
- Structural Analysis Report by Paul J Ford, dated February 4, 2021
- Construction Drawings by GPD Engineering, dated August 21, 2018
- Structural Analysis Report by Ramaker & Associates, dated May 6, 2015
- Construction Drawings by URS Corporation, dated November 10, 2007

Assumptions and Limitations:

- The tower and structures were built and maintained with the manufacturer's specifications.
- The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in this report and the referenced drawings.
- Existing appurtenance information obtained from the previous Structural Analysis Report by Paul J Ford, dated February 4, 2021.

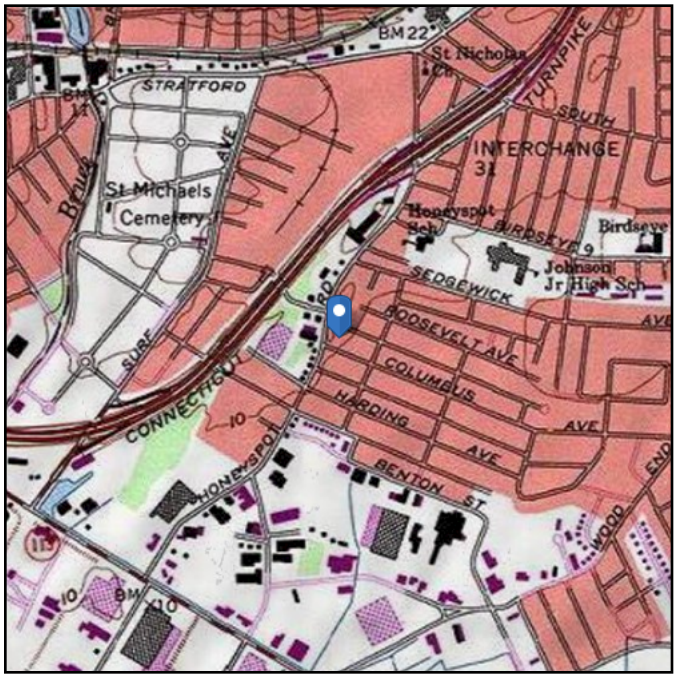
Design Calculations

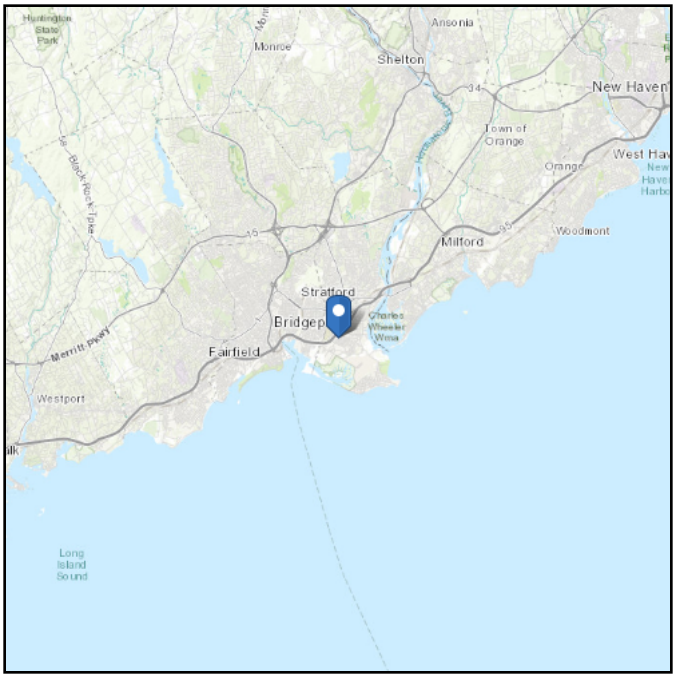
ASCE 7 Hazards Report

Address:
32 Columbus Ave
Stratford, Connecticut
06615

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 12.45 ft (NAVD 88)
Latitude: 41.17711
Longitude: -73.14562





Wind

Results:

Wind Speed:	124 Vmph
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	93 Vmph
100-year MRI	100 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Date Accessed: Fri Oct 08 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

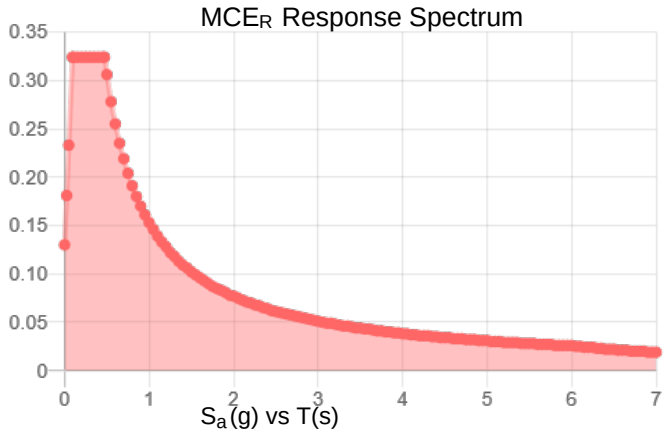
Seismic

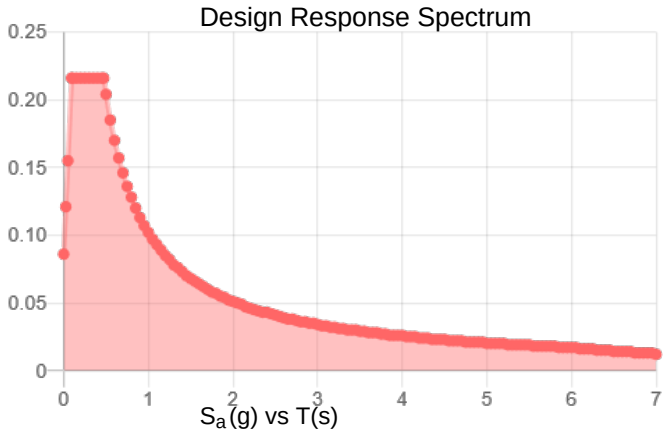
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.203	S_{DS} :	0.216
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.109
S_{MS} :	0.324	PGA_M :	0.173
S_{M1} :	0.153	F_{PGA} :	1.582
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Oct 08 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri Oct 08 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Snow

Results:

Ground Snow Load, p_g:	30 lb/ft^2
Elevation:	12.5 ft
Data Source:	ASCE/SEI 7-10, Fig. 7-1.
Date Accessed:	Fri Oct 08 2021

Values provided are ground snow loads. In areas designated "case study required," extreme local variations in ground snow loads preclude mapping at this scale. Site-specific case studies are required to establish ground snow loads at elevations not covered.

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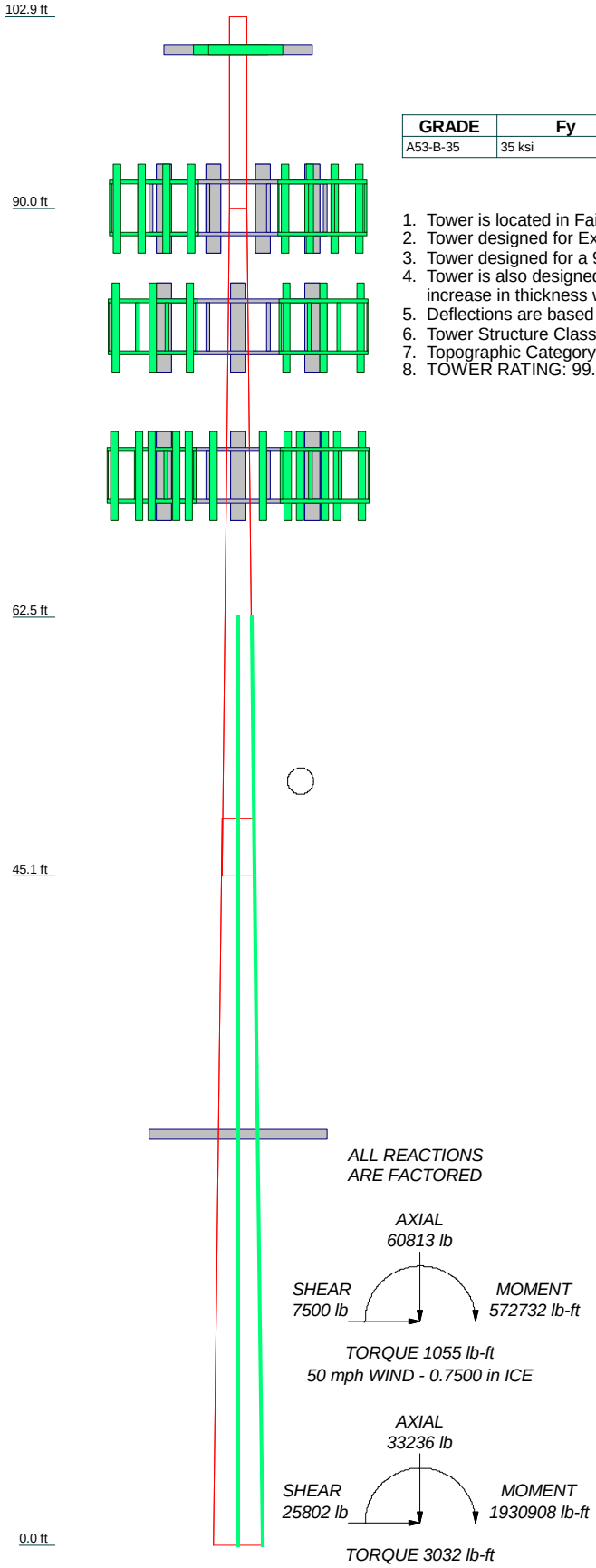
Section	1	2	3
Length (ft)	12.92	44.92	48.92
Number of Sides	1	18	18
Thickness (in)	0.2500	0.2500	0.3125
Socket Length (ft)		3.84	
Top Dia (in)	13.0000	13.0000	25.1134
Bot Dia (in)	13.0000	26.7925	40.0000
Grade	A53-B-35	A53-B-35	A572-65
Tube Length (ft)		30.25	32.25
Reinf Size		4x1 1/4	4.25 x 1.25
Reinf Grade			A572-65
Weight (lb)	440.2	2382.9	5323.9

Total Weight: 8147.0



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

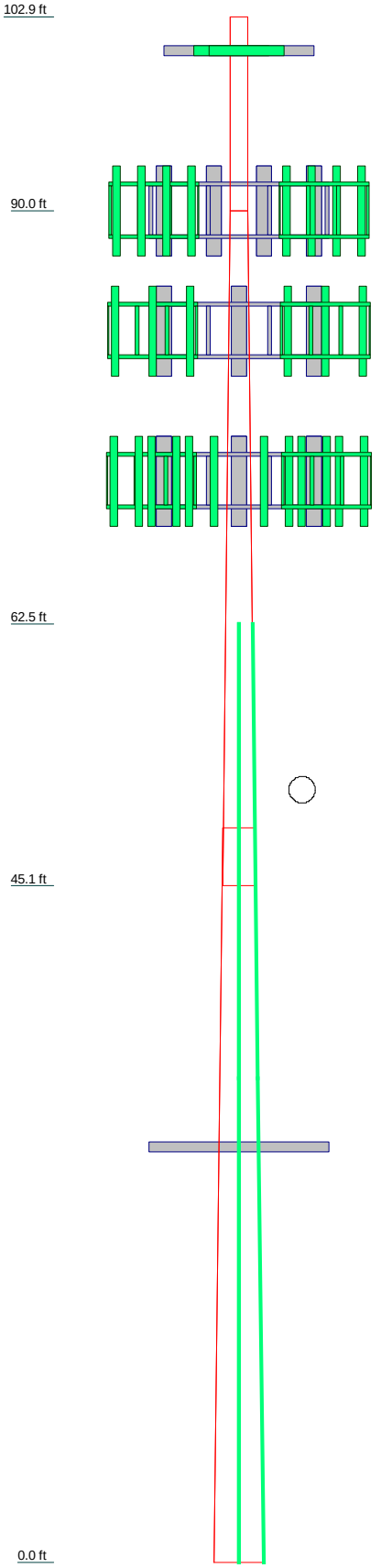
1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 99.5%

Centerline Communications
750 West Center Street, Suite 301
West Bridgewater, MA 02379
Phone: 781-713-4725
FAX:

Job: ***CTFF899A***			
Project: ***Sprint Retain***			
Client: T-Mobile	Drawn by: Arielle Novak		App'd:
Code: TIA-222-G	Date: 10/27/21		Scale: NTS
Path:			Dwg No. E-1

Section	1	2	3
Length (ft)	12.92	44.92	48.92
Number of Sides	1	18	18
Thickness (in)	0.2500	0.2500	0.3125
Socket Length (ft)		3.84	
Top Dia (in)	13.0000	13.0000	25.1134
Bot Dia (in)	13.0000	26.7925	40.0000
Grade	A53-B-35		
Tube Length (ft)		30.25	32.25
Reinf Size		4x1 1/4	4.25 x 1.25
Reinf Grade		A572-65	A572-65
Weight (lb)	440.2	2382.9	5323.9

Total Weight (lb): 8147.0



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION
5' Sector Frame T-Arm Mount	101
5' Sector Frame T-Arm Mount	101
5' Sector Frame T-Arm Mount	101
7770_TIA w/ Mount Pipe	90
7770_TIA w/ Mount Pipe	90
7770_TIA w/ Mount Pipe	90
AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe	90
AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe	90
AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe	90
80010965_TIA w/ Mount Pipe	90
80010965_TIA w/ Mount Pipe	90
80010965_TIA w/ Mount Pipe	90
QS66512-2_TIA w/ Mount Pipe	90
QS66512-2_TIA w/ Mount Pipe	90
QS66512-2_TIA w/ Mount Pipe	90
RRUS 32	90
RRUS 32	90
RRUS 32	90
RRUS 4478 B14	90
RRUS 4478 B14	90
RRUS 4478 B14	90
RRUS 32 B2	90
RRUS 32 B2	90
RRUS 32 B2	90
RRUS 4426 B66	90
RRUS 4426 B66	90
RRUS 4426 B66	90
RRUS 11 B12	90
RRUS 11 B12	90
RRUS 11 B12	90
DC6-48-60-18-8F	90
DC6-48-60-18-8F	90
DC6-48-60-18-8F	90
(2) LGP 17201	90
(2) LGP 17201	90
(2) LGP 17201	90
(2) DBC0061F1V51-2	90
(2) DBC0061F1V51-2	90
(2) DBC0061F1V51-2	90
(2) TPX-070821	90
(2) TPX-070821	90
(2) TPX-070821	90
Rohn 14' Platform	90
8' Ladder	90
(2) MX06FRO660-03_TIA w/ Mount Pipe	82
(2) MX06FRO660-03_TIA w/ Mount Pipe	82
(2) MX06FRO660-03_TIA w/ Mount Pipe	82
BXA-70063-6CF-EDIN-X_TIA w/ Mount Pipe	82

TYPE	ELEVATION
BXA-70063-6CF-EDIN-X_TIA w/ Mount Pipe	82
BXA-70063-6CF-EDIN-X_TIA w/ Mount Pipe	82
VZS01 Antenna w/ MP	82
VZS01 Antenna w/ MP	82
VZS01 Antenna w/ MP	82
B2/B66a RRH-BR049	82
B2/B66a RRH-BR049	82
B2/B66a RRH-BR049	82
B5/B13 RRH-BR04C	82
B5/B13 RRH-BR04C	82
B5/B13 RRH-BR04C	82
DB-B1-6C-12AB-0Z	82
DB-B1-6C-12AB-0Z	82
Rohn 14' Platform	82
8' Ladder	82
AIR6449 B41 (TMO)	72
AIR6449 B41 (TMO)	72
AIR6449 B41 (TMO)	72
VV-65A-R1 (TMO)	72
VV-65A-R1 (TMO)	72
VV-65A-R1 (TMO)	72
RADIO 4480 B71+B85 (TMO)	72
RADIO 4480 B71+B85 (TMO)	72
RADIO 4480 B71+B85 (TMO)	72
RADIO 4460 B25_B66 (Frontal Shielding) (TMO)	72
RADIO 4460 B25_B66 (Frontal Shielding) (TMO)	72
RADIO 4460 B25_B66 (Frontal Shielding) (TMO)	72
(4) 8' x 2" Mount Pipe (Partial Shielding) (TMO)	72
(4) 8' x 2" Mount Pipe (Partial Shielding) (TMO)	72
(4) 8' x 2" Mount Pipe (Partial Shielding) (TMO)	72
Site Pro 1 F4P-HRK8 (TMO)	72
Site Pro 1 F4P-8W (TMO)	72
APXVAALL24_43-U-NA20 (TMO)	72
APXVAALL24_43-U-NA20 (TMO)	72
APXVAALL24_43-U-NA20 (TMO)	72
5' Sector Frame T-Arm Mount	28
5' Sector Frame T-Arm Mount	28
14' T-Arm Mount	28
20' x 3" Omni	28
10' x 3" Dia Omni	28
10' x 3" Dia Omni	28
10' x 3" Dia Omni	28
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10' x 3" Dia Omni	28
GPS	28

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FAX:

Job: ***CTFF899A***			
Project: ***Sprint Retain***			
Client: T-Mobile	Drawn by: Arielle Novak		App'd:
Code: TIA-222-G	Date: 10/27/21		Scale: NTS
Path:			Dwg No. E-1

Section	1	2	3							
Length (ft)	12.92	44.92	48.92							440.2
Number of Sides	1	18	18							
Thickness (in)	0.2500	0.2500	0.3125							
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Top Dia (in)	13.0000	13.0000	25.1134							
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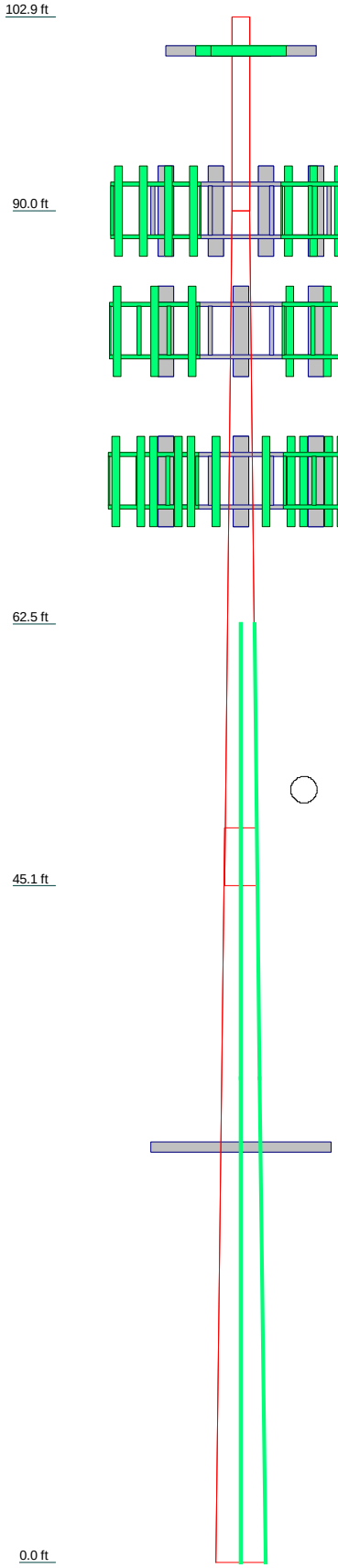
Grade	A53-B-35	A572-65								
Tube Length (ft)		30.25	32.25							2382.9
Reinf Size		4x1 1/4	4.25 x 1.25							
Reinf Grade			A572-65							
Weight (lb)			5323.9							8147.0



DESIGNED APPURTENANCE LOADING

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7770_TIA w/ Mount Pipe	90
7770_TIA w/ Mount Pipe	90
AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe	90
AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe	90
AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe	90
80010965_TIA w/ Mount Pipe	90
80010965_TIA w/ Mount Pipe	90
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RRUS 32	90
RRUS 32	90
RRUS 32	90
RRUS 4478 B14	90
RRUS 4478 B14	90
RRUS 4478 B14	90
RRUS 32 B2	90
RRUS 32 B2	90
RRUS 32 B2	90
RRUS 4426 B66	90
RRUS 4426 B66	90
RRUS 4426 B66	90
RRUS 11 B12	90
RRUS 11 B12	90
RRUS 11 B12	90
DC6-48-60-18-8F	90
DC6-48-60-18-8F	90
DC6-48-60-18-8F	90
(2) LGP 17201	90
(2) LGP 17201	90
(2) LGP 17201	90
(2) DBC0061F1V51-2	90
(2) DBC0061F1V51-2	90
(2) DBC0061F1V51-2	90
(2) TPX-070821	90
(2) TPX-070821	90
(2) TPX-070821	90
Rohn 14' Platform	90
8' Ladder	90
(2) MX06FRO660-03_TIA w/ Mount Pipe	82
(2) MX06FRO660-03_TIA w/ Mount Pipe	82
(2) MX06FRO660-03_TIA w/ Mount Pipe	82
BXA-70063-6CF-EDIN-X_TIA w/ Mount Pipe	82

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BXA-70063-6CF-EDIN-X_TIA w/ Mount Pipe	82
BXA-70063-6CF-EDIN-X_TIA w/ Mount Pipe	82
VZS01 Antenna w/ MP	82
VZS01 Antenna w/ MP	82
VZS01 Antenna w/ MP	82
B2/B66a RRH-BR049	82
B2/B66a RRH-BR049	82
B2/B66a RRH-BR049	82
B5/B13 RRH-BR04C	82
B5/B13 RRH-BR04C	82
B5/B13 RRH-BR04C	82
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10' x 3" Dia Omni	28
GPS	28

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Project: ***Sprint Retain***			
Client: T-Mobile	Drawn by: Arielle Novak		App'd:
Code: TIA-222-G	Date: 10/27/21		Scale: NTS
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TIA-222-G - 97 mph/50 mph 0.7500 in Ice Exposure C

Maximum Values

Vx Vz Mx Mz

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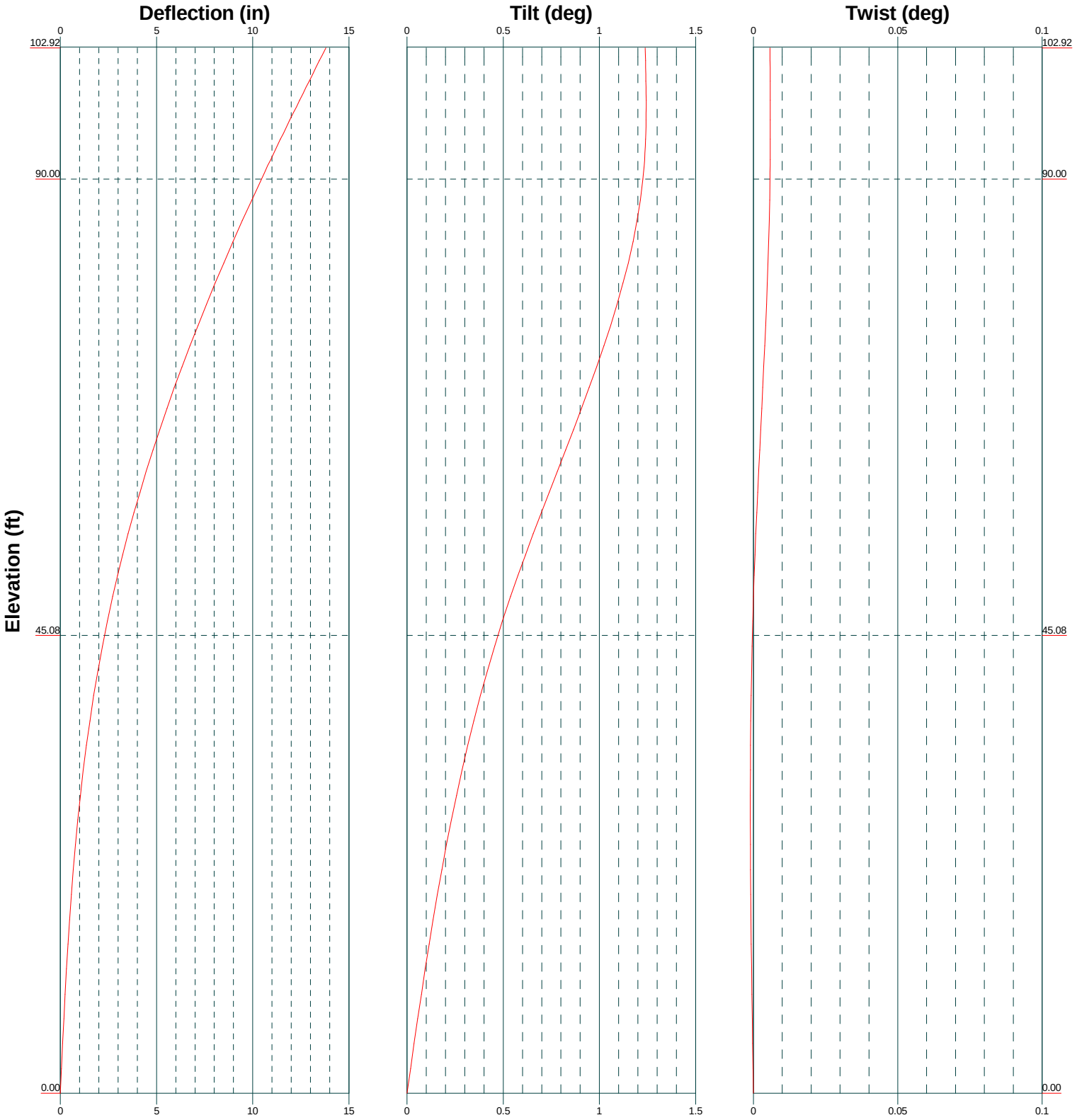
Path:			Dwg No. E-4

TIA-222-G - Service - 60 mph

Maximum Values



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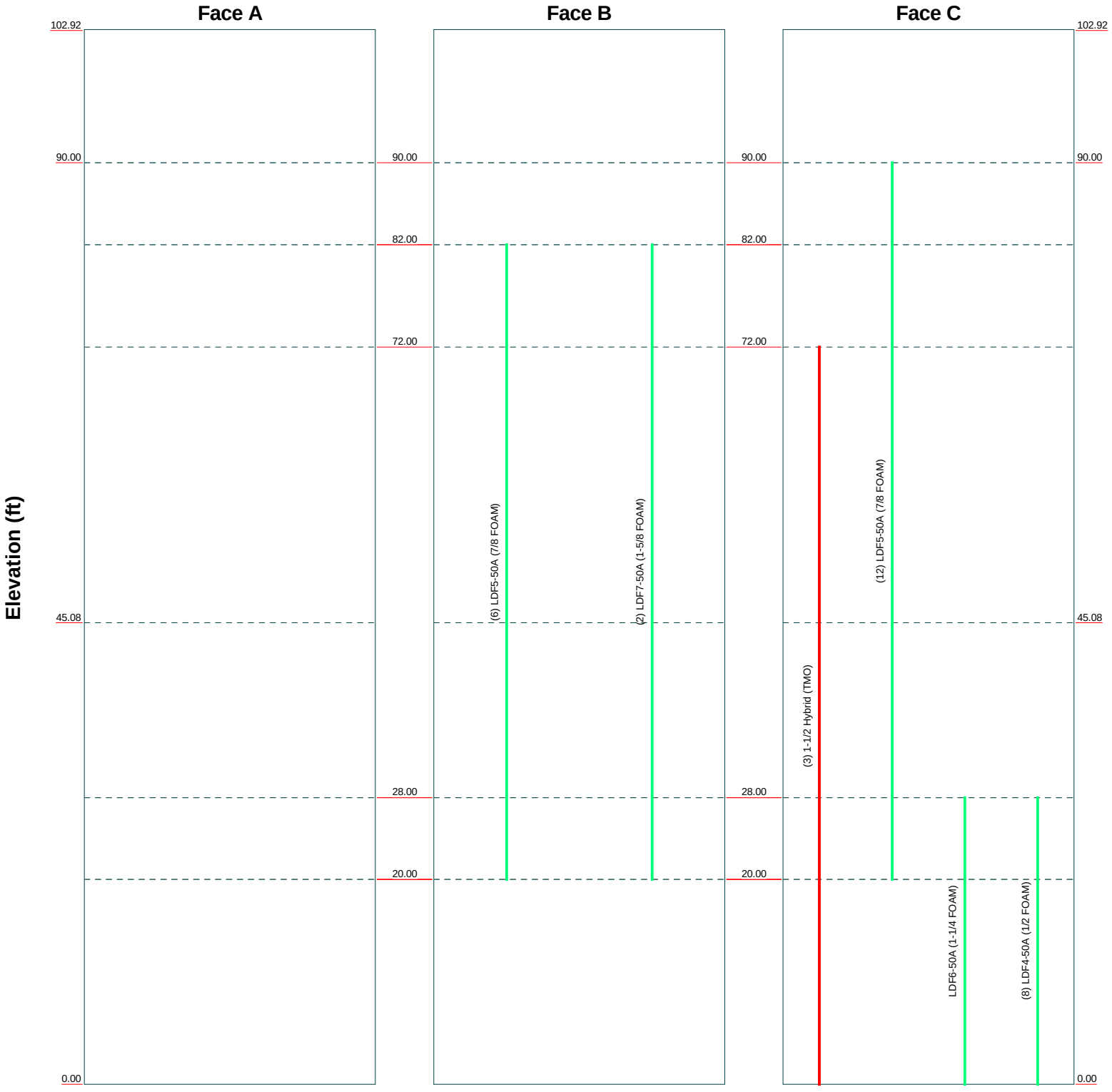
FAX:

Job: ***CTFF899A***			
Project: ***Sprint Retain***			
Client: T-Mobile	Drawn by: Arielle Novak		App'd:
Code: TIA-222-G	Date: 10/27/21		Scale: NTS
Path:			Dwg No. E-5

Feed Line Distribution Chart
0' - 102'11-1/32"

Round | Flat | App In Face | App Out Face | Truss Leg



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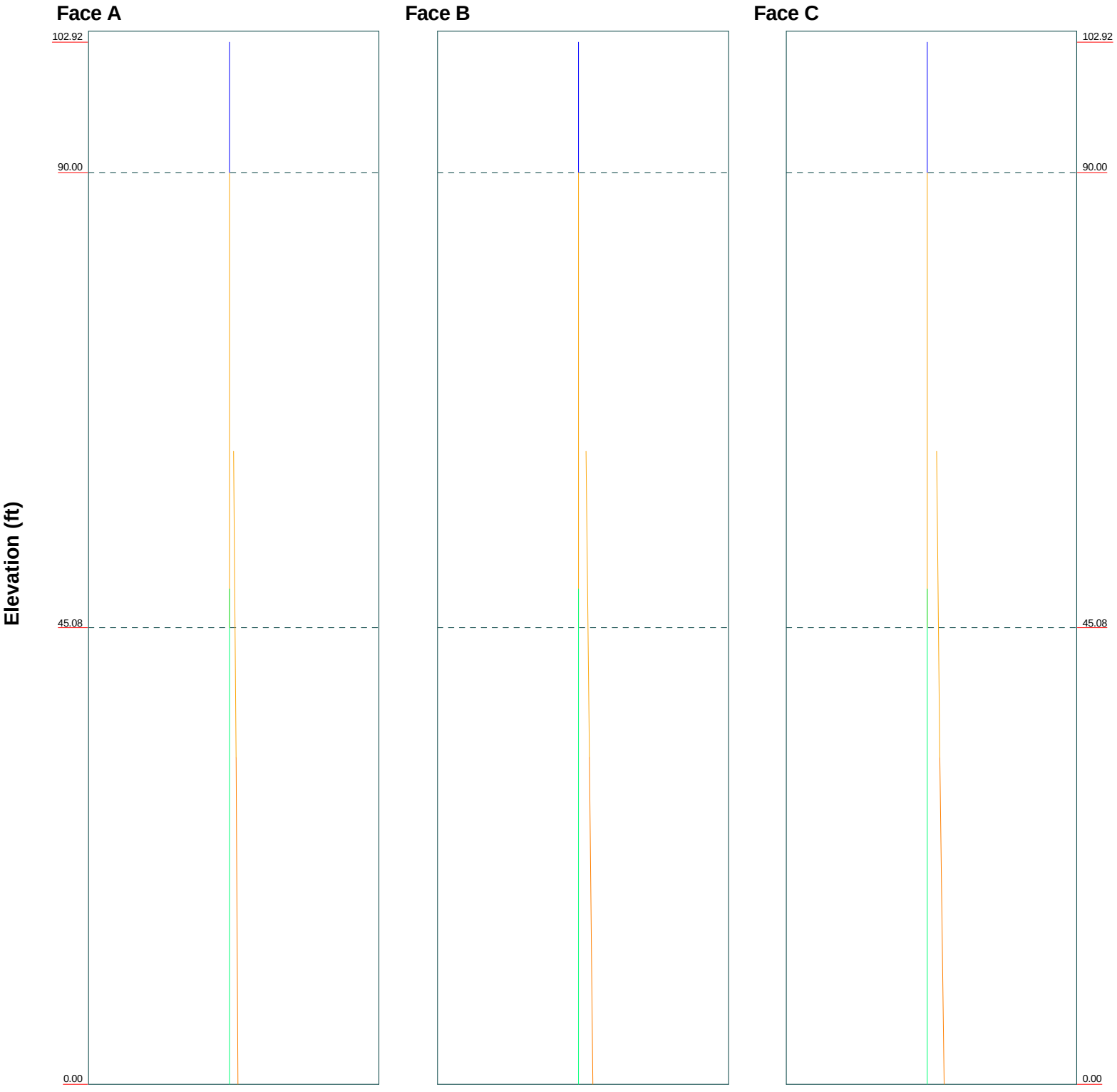
Phone: 781-713-4725
FAX:

Job: ***CTFF899A***			
Project: ***Sprint Retain***			
Client: T-Mobile	Drawn by: Arielle Novak	App'd:	
Code: TIA-222-G	Date: 10/27/21	Scale: NTS	
Path:		Dwg No. E-7	

Stress Distribution Chart
0' - 102'11-1/32"

> 100% | 90%-100% | 75%-90% | 50%-75% | < 50% Overstress



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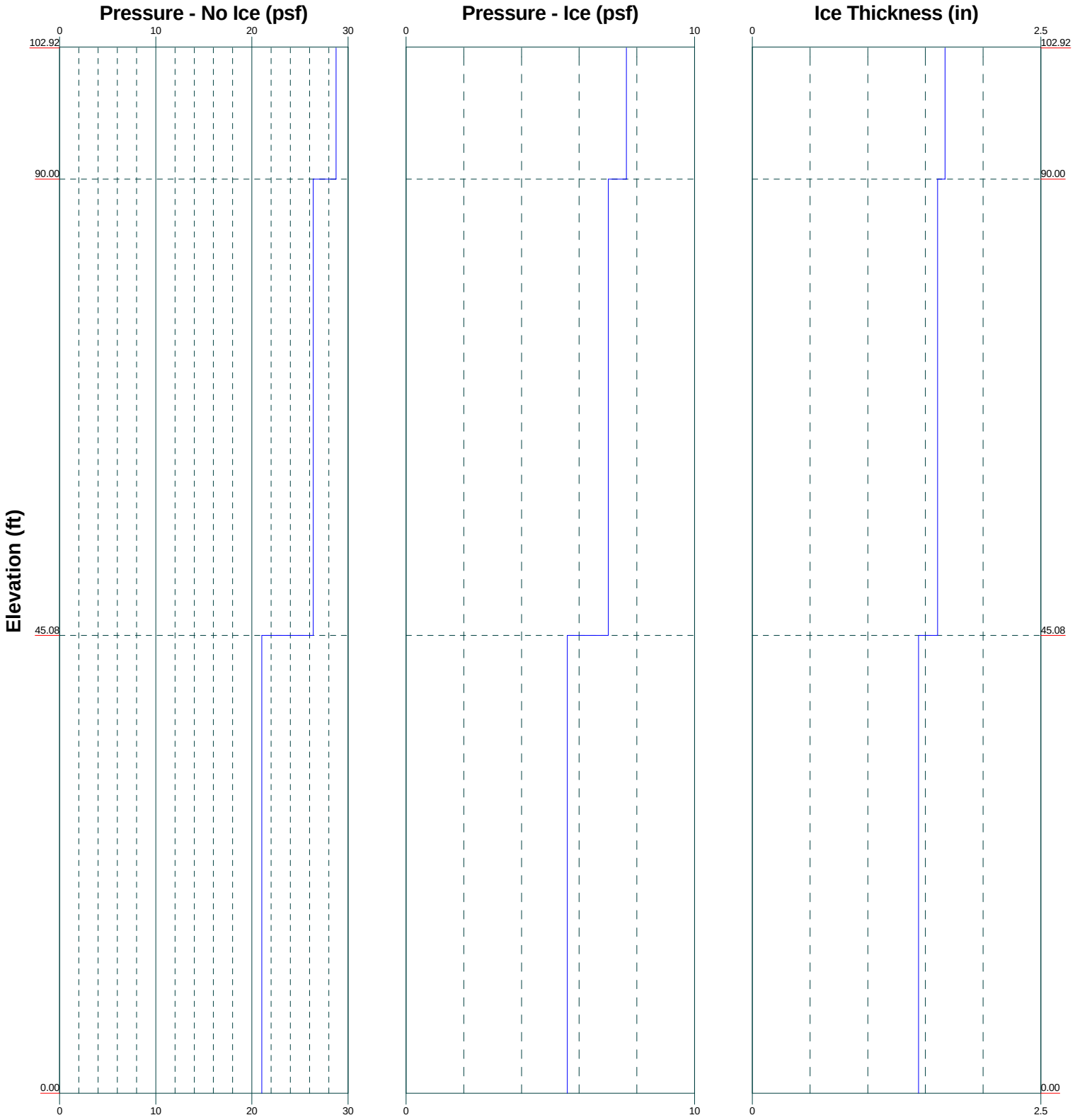
FAX:

Job: ***CTFF899A***			
Project: ***Sprint Retain***			
Client: T-Mobile	Drawn by: Arielle Novak	App'd:	
Code: TIA-222-G	Date: 10/27/21	Scale: NTS	
Path:		Dwg No. E-8	

Wind Pressures and Ice Thickness

TIA-222-G - 97 mph/50 mph 0.7500 in Ice Exposure C



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FAX:

Job: ***CTFF899A***			
Project: ***Sprint Retain***			
Client: T-Mobile	Drawn by: Arielle Novak		App'd:
Code: TIA-222-G	Date: 10/27/21		Scale: NTS
Path:			Dwg No. E-9

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	102.92-90.00	12.92	0.00	Round	13.0000	13.0000	0.2500		A53-B-35 (35 ksi)
L2	90.00-45.08	44.92	3.84	18	13.0000	26.7925	0.2500	1.0000	A572-65 (65 ksi)
L3	45.08-0.00	48.92		18	25.1134	40.0000	0.3125	1.2500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	13.0000	10.0138	203.5623	4.5087	6.5000	31.3173	407.1246	5.0039	0.0000	0
	13.0000	10.0138	203.5623	4.5087	6.5000	31.3173	407.1246	5.0039	0.0000	0
L2	13.1620	10.1171	207.7854	4.5263	6.6040	31.4636	415.8441	5.0595	1.8480	7.392
	27.1673	21.0615	1874.6054	9.4226	13.6106	137.7314	3751.6774	10.5327	4.2755	17.102
L3	26.6392	24.5994	1911.6088	8.8043	12.7576	149.8404	3825.7330	12.3021	3.8700	12.384
	40.5689	39.3650	7833.4959	14.0891	20.3200	385.5067	15677.2994	19.6863	6.4900	20.768

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 102.92-90.00				1	1	1			
L2 90.00-45.08				1	1	1			
L3 45.08-0.00				1	1	1			

Pole Reinforcing Data

Height Above Base ft	Segment Length ft	No. of Segments	Offset in	Grade	Type	Size	Unbraced Length ft	K	Bolt Hole Dia. in	Bolts per Row	Shear Lag Factor U
32.25	30.25	4	0.0000	A572-65 (65 ksi)	Flat Bar	4x1 1/4	2.00	1.00	0.7500	1	1.000
0.00	32.25	4	0.0000	A572-65 (65 ksi)	Flat Bar	4.25 x 1.25	2.00	1.00	0.7500	1	1.000

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
1-1/2 Hybrid (TMO) ***	C	No	Surface Ar (CaAa)	72.00 - 0.00	3	3	0.000 0.400	1.9800		0.82

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
***										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
***									
LDF5-50A (7/8 FOAM)	C	No	No	Inside Pole	90.00 - 20.00	12	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
LDF5-50A (7/8 FOAM)	B	No	No	Inside Pole	82.00 - 20.00	6	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
LDF7-50A (1-5/8 FOAM)	B	No	No	Inside Pole	82.00 - 20.00	2	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
LDF6-50A (1-1/4 FOAM)	C	No	No	Inside Pole	28.00 - 0.00	1	No Ice	0.00	0.66
							1/2" Ice	0.00	0.66
							1" Ice	0.00	0.66
LDF4-50A (1/2 FOAM)	C	No	No	Inside Pole	28.00 - 0.00	8	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
***									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	102.92-90.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	90.00-45.08	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	133.65
		C	0.000	0.000	15.990	0.000	244.11
L3	45.08-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	90.79
		C	0.000	0.000	26.778	0.000	262.29

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	102.92-90.00	A	1.670	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
		C		0.000	0.000	0.000	0.000	0.00
L2	90.00-45.08	A	1.606	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	133.65
		C		0.000	0.000	30.797	0.000	584.29
L3	45.08-0.00	A	1.440	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	90.79
		C		0.000	0.000	51.572	0.000	831.97

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	102.92-90.00	0.0000	0.0000	0.0000	0.0000
L2	90.00-45.08	-1.2317	2.7664	-1.0068	2.2613
L3	45.08-0.00	-1.7574	3.9471	-1.5016	3.3728

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L2	1	1-1/2 Hybrid	45.08 - 72.00	1.0000	1.0000
L3	1	1-1/2 Hybrid	0.00 - 45.08	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
APXVAALL24_43-U-NA20 (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.54	8.89 9.49 10.09	153.30 265.89 387.02
APXVAALL24_43-U-NA20 (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.54	8.89 9.49 10.09	153.30 265.89 387.02
APXVAALL24_43-U-NA20 (TMO)	C	From Leg	4.00 0.00	0.0000	72.00	No Ice 1/2" Ice	20.24 20.89	8.89 9.49	153.30 265.89

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	21.54	10.09	387.02
AIR6449 B41 (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	5.68 5.98 6.28	2.49 2.72 2.95	104.00 143.12 182.24
AIR6449 B41 (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	5.68 5.98 6.28	2.49 2.72 2.95	104.00 143.12 182.24
AIR6449 B41 (TMO)	C	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	5.68 5.98 6.28	2.49 2.72 2.95	104.00 143.12 182.24
VV-65A-R1 (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	5.93 6.29 6.66	2.75 3.09 3.44	23.81 57.65 96.32
VV-65A-R1 (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	5.93 6.29 6.66	2.75 3.09 3.44	23.81 57.65 96.32
VV-65A-R1 (TMO)	C	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	5.93 6.29 6.66	2.75 3.09 3.44	23.81 57.65 96.32
RADIO 4480 B71+B85 (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	2.45 2.65 2.85	1.27 1.42 1.59	87.00 106.69 129.33
RADIO 4480 B71+B85 (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	2.45 2.65 2.85	1.27 1.42 1.59	87.00 106.69 129.33
RADIO 4480 B71+B85 (TMO)	C	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	2.45 2.65 2.85	1.27 1.42 1.59	87.00 106.69 129.33
RADIO 4460 B25_B66 (Frontal Shielding) (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.50 1.65 1.81	108.00 130.16 155.36
RADIO 4460 B25_B66 (Frontal Shielding) (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.50 1.65 1.81	108.00 130.16 155.36
RADIO 4460 B25_B66 (Frontal Shielding) (TMO)	C	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.50 1.65 1.81	108.00 130.16 155.36
(4) 8' x 2" Mount Pipe (Partial Shielding) (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	0.95 1.36 1.77	1.90 2.73 3.40	29.28 43.62 63.24
(4) 8' x 2" Mount Pipe (Partial Shielding) (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	0.95 1.36 1.77	1.90 2.73 3.40	29.28 43.62 63.24
(4) 8' x 2" Mount Pipe (Partial Shielding) (TMO)	C	From Leg	4.00 0.00 0.00	0.0000	72.00	No Ice 1/2" Ice 1" Ice	0.95 1.36 1.77	1.90 2.73 3.40	29.28 43.62 63.24
Site Pro 1 F4P-HRK8 (TMO)	C	None		0.0000	72.00	No Ice 1/2" Ice 1" Ice	5.91 8.16 10.51	7.25 9.86 11.76	465.00 551.00 670.00
Site Pro 1 F4P-8W (TMO)	C	None		0.0000	72.00	No Ice 1/2" Ice 1" Ice	38.50 49.30 60.10	38.50 49.30 60.10	2283.00 2912.00 3541.00
***									
5' Sector Frame T-Arm Mount	A	From Leg	0.00 0.00 0.00	0.0000	101.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 90.00 130.00
5' Sector Frame T-Arm	B	From Leg	0.00	0.0000	101.00	No Ice	2.72	2.72	50.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Mount			0.00				1/2" Ice	4.91	4.91	90.00
			0.00				1" Ice	7.10	7.10	130.00
5' Sector Frame T-Arm Mount	C	From Leg	0.00		0.0000	101.00	No Ice	2.72	2.72	50.00
			0.00				1/2" Ice	4.91	4.91	90.00
			0.00				1" Ice	7.10	7.10	130.00
***										
7770_TIA w/ Mount Pipe	A	From Leg	4.00		0.0000	90.00	No Ice	5.75	4.25	60.00
			0.00				1/2" Ice	6.18	5.01	100.00
			0.00				1" Ice	6.61	5.71	160.00
7770_TIA w/ Mount Pipe	B	From Leg	4.00		0.0000	90.00	No Ice	5.75	4.25	60.00
			0.00				1/2" Ice	6.18	5.01	100.00
			0.00				1" Ice	6.61	5.71	160.00
7770_TIA w/ Mount Pipe	C	From Leg	4.00		0.0000	90.00	No Ice	5.75	4.25	60.00
			0.00				1/2" Ice	6.18	5.01	100.00
			0.00				1" Ice	6.61	5.71	160.00
AM-X-CD-16-65-00T-RET_ TIA w/ Mount Pipe	A	From Leg	4.00		0.0000	90.00	No Ice	8.26	6.36	70.00
			0.00				1/2" Ice	8.82	7.54	140.00
			0.00				1" Ice	9.35	8.43	210.00
AM-X-CD-16-65-00T-RET_ TIA w/ Mount Pipe	B	From Leg	4.00		0.0000	90.00	No Ice	8.26	6.36	70.00
			0.00				1/2" Ice	8.82	7.54	140.00
			0.00				1" Ice	9.35	8.43	210.00
AM-X-CD-16-65-00T-RET_ TIA w/ Mount Pipe	C	From Leg	4.00		0.0000	90.00	No Ice	8.26	6.36	70.00
			0.00				1/2" Ice	8.82	7.54	140.00
			0.00				1" Ice	9.35	8.43	210.00
80010965_TIA w/ Mount Pipe	A	From Leg	4.00		0.0000	90.00	No Ice	14.05	7.63	140.00
			0.00				1/2" Ice	14.69	8.90	230.00
			0.00				1" Ice	15.30	9.96	340.00
80010965_TIA w/ Mount Pipe	B	From Leg	4.00		0.0000	90.00	No Ice	14.05	7.63	140.00
			0.00				1/2" Ice	14.69	8.90	230.00
			0.00				1" Ice	15.30	9.96	340.00
80010965_TIA w/ Mount Pipe	C	From Leg	4.00		0.0000	90.00	No Ice	14.05	7.63	140.00
			0.00				1/2" Ice	14.69	8.90	230.00
			0.00				1" Ice	15.30	9.96	340.00
QS66512-2_TIA w/ Mount Pipe	A	From Leg	4.00		0.0000	90.00	No Ice	8.37	8.46	140.00
			0.00				1/2" Ice	8.93	9.66	210.00
			0.00				1" Ice	10.55	10.55	300.00
QS66512-2_TIA w/ Mount Pipe	B	From Leg	4.00		0.0000	90.00	No Ice	8.37	8.46	140.00
			0.00				1/2" Ice	8.93	9.66	210.00
			0.00				1" Ice	10.55	10.55	300.00
QS66512-2_TIA w/ Mount Pipe	C	From Leg	4.00		0.0000	90.00	No Ice	8.37	8.46	140.00
			0.00				1/2" Ice	8.93	9.66	210.00
			0.00				1" Ice	10.55	10.55	300.00
RRUS 32	A	From Leg	4.00		0.0000	90.00	No Ice	2.86	1.78	60.00
			0.00				1/2" Ice	3.08	1.97	80.00
			0.00				1" Ice	3.32	2.17	100.00
RRUS 32	B	From Leg	4.00		0.0000	90.00	No Ice	2.86	1.78	60.00
			0.00				1/2" Ice	3.08	1.97	80.00
			0.00				1" Ice	3.32	2.17	100.00
RRUS 32	C	From Leg	4.00		0.0000	90.00	No Ice	2.86	1.78	60.00
			0.00				1/2" Ice	3.08	1.97	80.00
			0.00				1" Ice	3.32	2.17	100.00
RRUS 4478 B14	A	From Leg	4.00		0.0000	90.00	No Ice	2.02	1.25	60.00
			0.00				1/2" Ice	2.20	1.40	80.00
			0.00				1" Ice	2.39	1.55	100.00
RRUS 4478 B14	B	From Leg	4.00		0.0000	90.00	No Ice	2.02	1.25	60.00
			0.00				1/2" Ice	2.20	1.40	80.00
			0.00				1" Ice	2.39	1.55	100.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
RRUS 4478 B14	C	From Leg	4.00		0.0000	90.00	No Ice	2.02	1.25	60.00
			0.00				1/2" Ice	2.20	1.40	80.00
			0.00				1" Ice	2.39	1.55	100.00
RRUS 32 B2	A	From Leg	4.00		0.0000	90.00	No Ice	2.74	1.67	50.00
			0.00				1/2" Ice	2.96	1.86	70.00
			0.00				1" Ice	3.19	2.05	100.00
RRUS 32 B2	B	From Leg	4.00		0.0000	90.00	No Ice	2.74	1.67	50.00
			0.00				1/2" Ice	2.96	1.86	70.00
			0.00				1" Ice	3.19	2.05	100.00
RRUS 32 B2	C	From Leg	4.00		0.0000	90.00	No Ice	2.74	1.67	50.00
			0.00				1/2" Ice	2.96	1.86	70.00
			0.00				1" Ice	3.19	2.05	100.00
RRUS 4426 B66	A	From Leg	4.00		0.0000	90.00	No Ice	1.64	0.73	50.00
			0.00				1/2" Ice	1.80	0.84	60.00
			0.00				1" Ice	1.97	0.97	80.00
RRUS 4426 B66	B	From Leg	4.00		0.0000	90.00	No Ice	1.64	0.73	50.00
			0.00				1/2" Ice	1.80	0.84	60.00
			0.00				1" Ice	1.97	0.97	80.00
RRUS 4426 B66	C	From Leg	4.00		0.0000	90.00	No Ice	1.64	0.73	50.00
			0.00				1/2" Ice	1.80	0.84	60.00
			0.00				1" Ice	1.97	0.97	80.00
RRUS 11 B12	A	From Leg	4.00		0.0000	90.00	No Ice	2.83	1.18	50.00
			0.00				1/2" Ice	3.04	1.33	70.00
			0.00				1" Ice	3.26	1.48	100.00
RRUS 11 B12	B	From Leg	4.00		0.0000	90.00	No Ice	2.83	1.18	50.00
			0.00				1/2" Ice	3.04	1.33	70.00
			0.00				1" Ice	3.26	1.48	100.00
RRUS 11 B12	C	From Leg	4.00		0.0000	90.00	No Ice	2.83	1.18	50.00
			0.00				1/2" Ice	3.04	1.33	70.00
			0.00				1" Ice	3.26	1.48	100.00
DC6-48-60-18-8F	A	From Leg	4.00		0.0000	90.00	No Ice	1.21	1.21	30.00
			0.00				1/2" Ice	1.89	1.89	50.00
			0.00				1" Ice	2.11	2.11	80.00
DC6-48-60-18-8F	B	From Leg	4.00		0.0000	90.00	No Ice	1.21	1.21	30.00
			0.00				1/2" Ice	1.89	1.89	50.00
			0.00				1" Ice	2.11	2.11	80.00
DC6-48-60-18-8F	C	From Leg	4.00		0.0000	90.00	No Ice	1.21	1.21	30.00
			0.00				1/2" Ice	1.89	1.89	50.00
			0.00				1" Ice	2.11	2.11	80.00
(2) LGP 17201	A	From Leg	4.00		0.0000	90.00	No Ice	1.67	0.47	30.00
			0.00				1/2" Ice	1.83	0.57	40.00
			0.00				1" Ice	2.00	0.68	60.00
(2) LGP 17201	B	From Leg	4.00		0.0000	90.00	No Ice	1.67	0.47	30.00
			0.00				1/2" Ice	1.83	0.57	40.00
			0.00				1" Ice	2.00	0.68	60.00
(2) LGP 17201	C	From Leg	4.00		0.0000	90.00	No Ice	1.67	0.47	30.00
			0.00				1/2" Ice	1.83	0.57	40.00
			0.00				1" Ice	2.00	0.68	60.00
(2) DBC0061F1V51-2	A	From Leg	4.00		0.0000	90.00	No Ice	0.21	0.41	10.00
			0.00				1/2" Ice	0.28	0.50	20.00
			0.00				1" Ice	0.35	0.59	20.00
(2) DBC0061F1V51-2	B	From Leg	4.00		0.0000	90.00	No Ice	0.21	0.41	10.00
			0.00				1/2" Ice	0.28	0.50	20.00
			0.00				1" Ice	0.35	0.59	20.00
(2) DBC0061F1V51-2	C	From Leg	4.00		0.0000	90.00	No Ice	0.21	0.41	10.00
			0.00				1/2" Ice	0.28	0.50	20.00
			0.00				1" Ice	0.35	0.59	20.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(2) TPX-070821	A	From Leg	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice 1" Ice	0.47 0.56 0.66	0.10 0.15 0.20	10.00 10.00 20.00
(2) TPX-070821	B	From Leg	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice 1" Ice	0.47 0.56 0.66	0.10 0.15 0.20	10.00 10.00 20.00
(2) TPX-070821	C	From Leg	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice 1" Ice	0.47 0.56 0.66	0.10 0.15 0.20	10.00 10.00 20.00
Rohn 14' Platform	C	None		0.0000	90.00	No Ice 1/2" Ice 1" Ice	41.00 56.00 71.00	41.00 56.00 71.00	2500.00 3000.00 3500.00
8' Ladder	C	None		0.0000	90.00	No Ice 1/2" Ice 1" Ice	7.07 9.73 11.19	7.07 9.73 11.19	40.00 70.00 80.00
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(2) MX06FRO660-03_TIA w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	10.11 10.68 11.22	8.99 10.15 11.03	100.00 190.00 290.00
(2) MX06FRO660-03_TIA w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	10.11 10.68 11.22	8.99 10.15 11.03	100.00 190.00 290.00
(2) MX06FRO660-03_TIA w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	10.11 10.68 11.22	8.99 10.15 11.03	100.00 190.00 290.00
BXA-70063-6CF-EDIN-X_TIA w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.80 6.95 7.82	60.00 120.00 190.00
BXA-70063-6CF-EDIN-X_TIA w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.80 6.95 7.82	60.00 120.00 190.00
BXA-70063-6CF-EDIN-X_TIA w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.80 6.95 7.82	60.00 120.00 190.00
VZS01 Antenna w/ MP	A	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	5.91 6.72 7.44	3.74 4.79 5.70	120.00 170.00 220.00
VZS01 Antenna w/ MP	B	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	5.91 6.72 7.44	3.74 4.79 5.70	120.00 170.00 220.00
VZS01 Antenna w/ MP	C	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	5.91 6.72 7.44	3.74 4.79 5.70	120.00 170.00 220.00
B2/B66a RRH-BR049	A	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	70.00 90.00 110.00
B2/B66a RRH-BR049	B	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	70.00 90.00 110.00
B2/B66a RRH-BR049	C	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	70.00 90.00 110.00
B5/B13 RRH-BR04C	A	From Leg	4.00 0.00 0.00	0.0000	82.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	70.00 90.00 110.00
B5/B13 RRH-BR04C	B	From Leg	4.00 0.00	0.0000	82.00	No Ice 1/2" Ice	1.88 2.05	1.01 1.14	70.00 90.00

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* lb
			0.00			1" Ice	2.22	1.28	110.00
B5/B13 RRH-BR04C	C	From Leg	4.00	0.0000	82.00	No Ice	1.88	1.01	70.00
			0.00			1/2" Ice	2.05	1.14	90.00
			0.00			1" Ice	2.22	1.28	110.00
DB-B1-6C-12AB-0Z	A	From Leg	4.00	0.0000	82.00	No Ice	3.36	2.19	30.00
			0.00			1/2" Ice	3.60	2.40	60.00
			0.00			1" Ice	3.84	2.61	90.00
DB-B1-6C-12AB-0Z	A	From Leg	4.00	0.0000	82.00	No Ice	3.36	2.19	30.00
			0.00			1/2" Ice	3.60	2.40	60.00
			0.00			1" Ice	3.84	2.61	90.00
Rohn 14' Platform	C	None		0.0000	82.00	No Ice	41.00	41.00	2500.00
						1/2" Ice	56.00	56.00	3000.00
						1" Ice	71.00	71.00	3500.00
8' Ladder	C	None		0.0000	82.00	No Ice	7.07	7.07	40.00
						1/2" Ice	9.73	9.73	70.00
						1" Ice	11.19	11.19	80.00
***									
5' Sector Frame T-Arm	A	From Leg	1.00	0.0000	28.00	No Ice	2.72	2.72	50.00
Mount			0.00			1/2" Ice	4.91	4.91	90.00
			0.00			1" Ice	7.10	7.10	130.00
5' Sector Frame T-Arm	A	From Leg	1.00	0.0000	28.00	No Ice	2.72	2.72	50.00
Mount			0.00			1/2" Ice	4.91	4.91	90.00
			0.00			1" Ice	7.10	7.10	130.00
14' T-Arm Mount	A	From Leg	1.00	0.0000	28.00	No Ice	3.50	1.60	340.00
			0.00			1/2" Ice	5.25	2.40	410.00
			0.00			1" Ice	7.88	3.60	490.00
20' x 3" Omni	A	From Leg	1.00	0.0000	28.00	No Ice	6.00	6.00	100.00
			0.00			1/2" Ice	8.03	8.03	140.00
			14.00			1" Ice	10.08	10.08	200.00
10' x 3" Dia Omni	A	From Leg	1.00	0.0000	28.00	No Ice	3.00	3.00	15.00
			0.00			1/2" Ice	4.03	4.03	25.00
			8.00			1" Ice	5.03	5.03	35.00
10' x 3" Dia Omni	A	From Leg	1.00	0.0000	28.00	No Ice	3.00	3.00	15.00
			0.00			1/2" Ice	4.03	4.03	25.00
			8.00			1" Ice	5.03	5.03	35.00
10' x 3" Dia Omni	A	From Leg	1.00	0.0000	28.00	No Ice	3.00	3.00	15.00
			0.00			1/2" Ice	4.03	4.03	25.00
			6.00			1" Ice	5.03	5.03	35.00
10' x 3" Dia Omni	A	From Leg	1.00	0.0000	28.00	No Ice	3.00	3.00	15.00
			0.00			1/2" Ice	4.03	4.03	25.00
			6.00			1" Ice	5.03	5.03	35.00
10' x 3" Dia Omni	A	From Leg	1.00	0.0000	28.00	No Ice	3.00	3.00	15.00
			0.00			1/2" Ice	4.03	4.03	25.00
			6.00			1" Ice	5.03	5.03	35.00
GPS	A	From Leg	1.00	0.0000	28.00	No Ice	0.26	0.26	5.00
			0.00			1/2" Ice	0.32	0.32	10.00
			2.00			1" Ice	0.39	0.39	15.00
***									

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	1	17255.86	0.00	-4.18
	Max. H_x	21	3261.21	21018.99	-5.15
	Max. H_z	3	3200.25	0.00	21416.44

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Max. M_x	2	1274967.22	0.00	21407.80
	Max. M_z	8	1265268.29	-21008.10	-6.35
	Max. Torsion	9	3029.82	-21018.99	-5.15
	Min. Vert	27	-86848.10	0.00	6697.05
	Min. H_x	9	3261.21	-21018.99	-5.15
	Min. H_z	15	3247.05	0.00	-21422.98
	Min. M_x	14	-1272726.32	0.00	-21416.48
	Min. M_z	20	-1265268.29	21008.10	-6.35
	Min. Torsion	21	-3029.82	21018.99	-5.15
Reinf @ Azimuth 90 deg	Max. Vert	8	202535.46	222.17	-2.30
	Max. H_x	20	-189959.39	5024.57	3.61
	Max. H_z	12	104378.59	-602.03	1301.00
	Min. Vert	20	-189959.39	5024.57	3.61
	Min. H_x	30	94691.44	-813.40	-3.11
	Min. H_z	4	104394.38	-602.03	-1304.21
Reinf @ Azimuth 0 deg	Max. Vert	2	203087.65	0.00	-297.25
	Max. H_x	6	104771.52	1251.55	569.36
	Max. H_z	27	95170.25	0.00	795.28
	Min. Vert	14	-190064.62	0.00	-4972.45
	Min. H_x	22	104771.52	-1251.55	569.36
	Min. H_z	14	-190064.62	0.00	-4972.45
Reinf @ Azimuth 270 deg	Max. Vert	20	202535.46	-222.17	-2.30
	Max. H_x	36	94691.44	813.40	-3.11
	Max. H_z	16	104378.59	602.03	1301.00
	Min. Vert	8	-189959.39	-5024.57	3.61
	Min. H_x	8	-189959.39	-5024.57	3.61
	Min. H_z	24	104394.38	602.03	-1304.21
Reinf @ Azimuth 180 deg	Max. Vert	14	202643.55	0.00	290.12
	Max. H_x	10	104339.23	1245.55	-570.19
	Max. H_z	2	-190476.75	0.00	4989.34
	Min. Vert	2	-190476.75	0.00	4989.34
	Min. H_x	18	104339.23	-1245.55	-570.19
	Min. H_z	33	94254.41	0.00	-793.86

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	27696.57	0.00	-0.00	-1481.60	0.00	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	33235.83	0.00	-25802.05	-1930907.84	0.00	0.00
0.9 Dead+1.6 Wind 0 deg - No Ice	24926.88	0.00	-25802.41	-1912369.75	0.00	0.00
1.2 Dead+1.6 Wind 30 deg - No Ice	33235.88	12818.64	-22346.04	-1672537.34	-959757.29	-1406.99
0.9 Dead+1.6 Wind 30 deg - No Ice	24926.90	12818.59	-22345.95	-1656381.20	-950708.73	-1410.83
1.2 Dead+1.6 Wind 60 deg - No Ice	33235.88	22202.53	-12901.49	-966413.83	-1662349.62	-2519.60
0.9 Dead+1.6 Wind 60 deg - No Ice	24926.90	22202.43	-12901.44	-956887.85	-1646676.61	-2524.02
1.2 Dead+1.6 Wind 90 deg - No	33235.83	25636.33	-0.00	-1822.97	-1919426.34	-3030.09

Load Combination	*Vertical*	*Shear$_x$*	*Shear$_z$*	*Overturning Moment, M$_x$*	*Overturning Moment, M$_z$*	*Torque*
	lb	*lb*	*lb*	*lb-ft*	*lb-ft*	*lb-ft*
Ice						
0.9 Dead+1.6 Wind 90 deg - No Ice	24926.88	25636.69	-0.00	-1355.54	-1901374.32	-3032.06
1.2 Dead+1.6 Wind 120 deg - No Ice	33235.88	22202.53	12901.49	962762.85	-1662339.81	-2728.60
0.9 Dead+1.6 Wind 120 deg - No Ice	24926.90	22202.44	12901.44	954173.04	-1646669.49	-2727.62
1.2 Dead+1.6 Wind 150 deg - No Ice	33235.88	12818.64	22346.04	1668874.96	-959747.46	-1623.05
0.9 Dead+1.6 Wind 150 deg - No Ice	24926.90	12818.59	22345.95	1653658.10	-950701.58	-1621.20
1.2 Dead+1.6 Wind 180 deg - No Ice	33235.83	0.00	25802.06	1927239.89	0.00	0.00
0.9 Dead+1.6 Wind 180 deg - No Ice	24926.88	0.00	25802.41	1909642.55	0.00	0.00
1.2 Dead+1.6 Wind 210 deg - No Ice	33235.88	-12818.64	22346.04	1668874.96	959747.46	1623.05
0.9 Dead+1.6 Wind 210 deg - No Ice	24926.90	-12818.59	22345.95	1653658.10	950701.58	1621.20
1.2 Dead+1.6 Wind 240 deg - No Ice	33235.88	-22202.53	12901.49	962762.85	1662339.81	2728.60
0.9 Dead+1.6 Wind 240 deg - No Ice	24926.90	-22202.44	12901.44	954173.04	1646669.49	2727.62
1.2 Dead+1.6 Wind 270 deg - No Ice	33235.83	-25636.33	-0.00	-1822.97	1919426.34	3030.09
0.9 Dead+1.6 Wind 270 deg - No Ice	24926.88	-25636.69	-0.00	-1355.54	1901374.32	3032.06
1.2 Dead+1.6 Wind 300 deg - No Ice	33235.88	-22202.53	-12901.49	-966413.83	1662349.62	2519.60
0.9 Dead+1.6 Wind 300 deg - No Ice	24926.90	-22202.43	-12901.44	-956887.85	1646676.61	2524.02
1.2 Dead+1.6 Wind 330 deg - No Ice	33235.88	-12818.64	-22346.04	-1672537.34	959757.29	1406.99
0.9 Dead+1.6 Wind 330 deg - No Ice	24926.90	-12818.59	-22345.95	-1656381.20	950708.73	1410.83
1.2 Dead+1.0 Ice+1.0 Temp	60812.57	0.00	1.49	-3357.64	0.00	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	60812.56	0.00	-7499.58	-572732.15	0.00	0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	60812.56	3723.27	-6494.83	-496489.95	-283360.21	-517.67
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	60812.56	6448.89	-3749.79	-288192.24	-490793.86	-903.89
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	60812.56	7446.53	0.01	-3652.33	-566719.19	-1055.10
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	60812.56	6448.89	3749.80	280886.77	-490792.47	-923.60
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	60812.56	3723.27	6494.84	489182.87	-283358.82	-537.43
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	60812.56	0.00	7499.60	565424.25	0.00	0.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	60812.56	-3723.27	6494.84	489182.87	283358.82	537.43
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	60812.56	-6448.89	3749.80	280886.77	490792.47	923.60
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	60812.56	-7446.53	0.01	-3652.33	566719.19	1055.10
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	60812.56	-6448.89	-3749.79	-288192.24	490793.86	903.89
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	60812.56	-3723.27	-6494.83	-496489.95	283360.21	517.67
Dead+Wind 0 deg - Service	27696.57	0.00	-5520.67	-412141.66	0.00	0.00

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 30 deg - Service	27696.57	2742.61	-4781.04	-357129.32	-204276.69	-320.90
Dead+Wind 60 deg - Service	27696.57	4750.33	-2760.34	-206832.77	-353817.48	-559.55
Dead+Wind 90 deg - Service	27696.57	5485.21	0.00	-1523.90	-408553.03	-651.98
Dead+Wind 120 deg - Service	27696.57	4750.33	2760.34	203784.75	-353817.11	-569.72
Dead+Wind 150 deg - Service	27696.57	2742.61	4781.04	354080.88	-204276.32	-331.08
Dead+Wind 180 deg - Service	27696.57	0.00	5520.67	409093.01	0.00	0.00
Dead+Wind 210 deg - Service	27696.57	-2742.61	4781.04	354080.88	204276.32	331.08
Dead+Wind 240 deg - Service	27696.57	-4750.33	2760.34	203784.75	353817.11	569.72
Dead+Wind 270 deg - Service	27696.57	-5485.21	0.00	-1523.90	408553.03	651.98
Dead+Wind 300 deg - Service	27696.57	-4750.33	-2760.34	-206832.77	353817.48	559.55
Dead+Wind 330 deg - Service	27696.57	-2742.61	-4781.04	-357129.32	204276.69	320.90

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	0.00	-27696.57	0.00	0.00	27696.57	0.00	0.000%
2	0.00	-33235.88	-25803.09	0.00	33235.83	25802.05	0.002%
3	0.00	-24926.91	-25803.09	0.00	24926.88	25802.41	0.002%
4	12818.69	-33235.88	-22346.13	-12818.64	33235.88	22346.04	0.000%
5	12818.69	-24926.91	-22346.13	-12818.59	24926.90	22345.95	0.001%
6	22202.63	-33235.88	-12901.55	-22202.53	33235.88	12901.49	0.000%
7	22202.63	-24926.91	-12901.55	-22202.43	24926.90	12901.44	0.001%
8	25637.38	-33235.88	0.00	-25636.33	33235.83	0.00	0.003%
9	25637.38	-24926.91	0.00	-25636.69	24926.88	0.00	0.002%
10	22202.63	-33235.88	12901.55	-22202.53	33235.88	-12901.49	0.000%
11	22202.63	-24926.91	12901.55	-22202.44	24926.90	-12901.44	0.001%
12	12818.69	-33235.88	22346.13	-12818.64	33235.88	-22346.04	0.000%
13	12818.69	-24926.91	22346.13	-12818.59	24926.90	-22345.95	0.001%
14	0.00	-33235.88	25803.09	0.00	33235.83	-25802.06	0.002%
15	0.00	-24926.91	25803.09	0.00	24926.88	-25802.41	0.002%
16	-12818.69	-33235.88	22346.13	12818.64	33235.88	-22346.04	0.000%
17	-12818.69	-24926.91	22346.13	12818.59	24926.90	-22345.95	0.001%
18	-22202.63	-33235.88	12901.55	22202.53	33235.88	-12901.49	0.000%
19	-22202.63	-24926.91	12901.55	22202.44	24926.90	-12901.44	0.001%
20	-25637.38	-33235.88	0.00	25636.33	33235.83	0.00	0.003%
21	-25637.38	-24926.91	0.00	25636.69	24926.88	0.00	0.002%
22	-22202.63	-33235.88	-12901.55	22202.53	33235.88	12901.49	0.000%
23	-22202.63	-24926.91	-12901.55	22202.43	24926.90	12901.44	0.001%
24	-12818.69	-33235.88	-22346.13	12818.64	33235.88	22346.04	0.000%
25	-12818.69	-24926.91	-22346.13	12818.59	24926.90	22345.95	0.001%
26	0.00	-60812.58	0.00	0.00	60812.57	-1.49	0.002%
27	0.00	-60812.58	-7500.60	0.00	60812.56	7499.58	0.002%
28	3723.78	-60812.58	-6495.71	-3723.27	60812.56	6494.83	0.002%
29	6449.77	-60812.58	-3750.30	-6448.89	60812.56	3749.79	0.002%
30	7447.56	-60812.58	0.00	-7446.53	60812.56	-0.01	0.002%
31	6449.77	-60812.58	3750.30	-6448.89	60812.56	-3749.80	0.002%
32	3723.78	-60812.58	6495.71	-3723.27	60812.56	-6494.84	0.002%
33	0.00	-60812.58	7500.60	0.00	60812.56	-7499.60	0.002%
34	-3723.78	-60812.58	6495.71	3723.27	60812.56	-6494.84	0.002%
35	-6449.77	-60812.58	3750.30	6448.89	60812.56	-3749.80	0.002%
36	-7447.56	-60812.58	0.00	7446.53	60812.56	-0.01	0.002%
37	-6449.77	-60812.58	-3750.30	6448.89	60812.56	3749.79	0.002%
38	-3723.78	-60812.58	-6495.71	3723.27	60812.56	6494.83	0.002%
39	0.00	-27696.57	-5520.85	0.00	27696.57	5520.67	0.001%
40	2742.70	-27696.57	-4781.20	-2742.61	27696.57	4781.04	0.001%
41	4750.49	-27696.57	-2760.43	-4750.33	27696.57	2760.34	0.001%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
42	5485.40	-27696.57	0.00	-5485.21	27696.57	-0.00	0.001%
43	4750.49	-27696.57	2760.43	-4750.33	27696.57	-2760.34	0.001%
44	2742.70	-27696.57	4781.20	-2742.61	27696.57	-4781.04	0.001%
45	0.00	-27696.57	5520.85	0.00	27696.57	-5520.67	0.001%
46	-2742.70	-27696.57	4781.20	2742.61	27696.57	-4781.04	0.001%
47	-4750.49	-27696.57	2760.43	4750.33	27696.57	-2760.34	0.001%
48	-5485.40	-27696.57	0.00	5485.21	27696.57	-0.00	0.001%
49	-4750.49	-27696.57	-2760.43	4750.33	27696.57	2760.34	0.001%
50	-2742.70	-27696.57	-4781.20	2742.61	27696.57	4781.04	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	13	0.00000001	0.00010818
3	Yes	13	0.00000001	0.00007273
4	Yes	15	0.00000001	0.00006698
5	Yes	14	0.00000001	0.00012332
6	Yes	15	0.00000001	0.00007251
7	Yes	14	0.00000001	0.00013365
8	Yes	13	0.00004050	0.00012238
9	Yes	13	0.00000001	0.00008284
10	Yes	15	0.00000001	0.00006610
11	Yes	14	0.00000001	0.00012162
12	Yes	15	0.00000001	0.00007034
13	Yes	14	0.00000001	0.00012984
14	Yes	13	0.00000001	0.00010816
15	Yes	13	0.00000001	0.00007272
16	Yes	15	0.00000001	0.00007034
17	Yes	14	0.00000001	0.00012984
18	Yes	15	0.00000001	0.00006610
19	Yes	14	0.00000001	0.00012162
20	Yes	13	0.00004050	0.00012238
21	Yes	13	0.00000001	0.00008284
22	Yes	15	0.00000001	0.00007251
23	Yes	14	0.00000001	0.00013365
24	Yes	15	0.00000001	0.00006698
25	Yes	14	0.00000001	0.00012332
26	Yes	6	0.00000001	0.00002862
27	Yes	13	0.00000001	0.00007456
28	Yes	13	0.00000001	0.00008597
29	Yes	13	0.00013513	0.00008855
30	Yes	13	0.00013602	0.00007588
31	Yes	13	0.00000001	0.00008496
32	Yes	13	0.00000001	0.00008587
33	Yes	13	0.00000001	0.00007344
34	Yes	13	0.00000001	0.00008587
35	Yes	13	0.00000001	0.00008496
36	Yes	13	0.00013602	0.00007588
37	Yes	13	0.00013513	0.00008855
38	Yes	13	0.00000001	0.00008597
39	Yes	13	0.00000001	0.00006205
40	Yes	13	0.00000001	0.00006234
41	Yes	13	0.00000001	0.00006407
42	Yes	13	0.00000001	0.00006337

43	Yes	13	0.00000001	0.00006259
44	Yes	13	0.00000001	0.00006287
45	Yes	13	0.00000001	0.00006180
46	Yes	13	0.00000001	0.00006287
47	Yes	13	0.00000001	0.00006259
48	Yes	13	0.00000001	0.00006337
49	Yes	13	0.00000001	0.00006407
50	Yes	13	0.00000001	0.00006234

Maximum Tower Deflections - Service Wind

Section No.	*Elevation* *ft*	*Horz. Deflection* *in*	*Gov. Load Comb.*	*Tilt* °	*Twist* °
L1	102.92 - 90	13.795	39	1.2373	0.0045
L2	90 - 45.08	10.455	39	1.2274	0.0045
L3	48.92 - 0	2.723	39	0.5406	0.0017

Critical Deflections and Radius of Curvature - Service Wind

Elevation *ft*	*Appurtenance*	*Gov. Load Comb.*	*Deflection* *in*	*Tilt* °	*Twist* °	*Radius of Curvature* *ft*
101.00	5' Sector Frame T-Arm Mount	39	13.289	1.2400	0.0045	12717
90.00	7770_TIA w/ Mount Pipe	39	10.455	1.2274	0.0045	5195
82.00	(2) MX06FRO660-03_TIA w/ Mount Pipe	39	8.551	1.1547	0.0042	4419
72.00	APXVAALL24_43-U-NA20	39	6.419	0.9973	0.0035	3920
28.00	5' Sector Frame T-Arm Mount	39	0.966	0.2437	0.0006	5431

Maximum Tower Deflections - Design Wind

Section No.	*Elevation* *ft*	*Horz. Deflection* *in*	*Gov. Load Comb.*	*Tilt* °	*Twist* °
L1	102.92 - 90	64.666	2	5.8084	0.0206
L2	90 - 45.08	49.009	2	5.7621	0.0206
L3	48.92 - 0	12.761	2	2.5361	0.0078

Critical Deflections and Radius of Curvature - Design Wind

Elevation *ft*	*Appurtenance*	*Gov. Load Comb.*	*Deflection* *in*	*Tilt* °	*Twist* °	*Radius of Curvature* *ft*
101.00	5' Sector Frame T-Arm Mount	2	62.293	5.8215	0.0207	2760
90.00	7770_TIA w/ Mount Pipe	2	49.009	5.7621	0.0206	1126
82.00	(2) MX06FRO660-03_TIA w/	2	40.087	5.4202	0.0193	955

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
	Mount Pipe					
72.00	APXVAALL24_43-U-NA20	2	30.088	4.6810	0.0163	844
28.00	5' Sector Frame T-Arm Mount	2	4.523	1.1423	0.0029	1158

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	102.92 - 90 (1)	TP13x13x0.25	12.92	0.00	0.0	10.0138	-630.70	315436.00	0.002
L2	90 - 45.08 (2)	TP26.7925x13x0.25	44.92	0.00	0.0	16.8172	-17605.20	1249440.00	0.014
L3	45.08 - 0 (3)	TP40x25.1134x0.3125	48.92	0.00	0.0	39.3650	-8065.59	2727070.00	0.003

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	102.92 - 90 (1)	TP13x13x0.25	6696.40	106695.00	0.063	0.00	106695.00	0.000
L2	90 - 45.08 (2)	TP26.7925x13x0.25	439183.33	542403.33	0.810	0.00	542403.33	0.000
L3	45.08 - 0 (3)	TP40x25.1134x0.3125	1274966.67	2225541.67	0.573	0.00	2225541.67	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	102.92 - 90 (1)	TP13x13x0.25	807.32	157718.00	0.005	0.00	164415.83	0.000
L2	90 - 45.08 (2)	TP26.7925x13x0.25	21773.00	610647.00	0.036	0.00	1088058.33	0.000
L3	45.08 - 0 (3)	TP40x25.1134x0.3125	21415.60	1363530.00	0.016	0.00	4461825.00	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	102.92 - 90 (1)	0.002	0.063	0.000	0.005	0.000	0.065	1.000	4.8.2
L2	90 - 45.08 (2)	0.014	0.810	0.000	0.036	0.000	0.825	1.000	4.8.2

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L3	45.08 - 0 (3)	0.003	0.573	0.000	0.016	0.000	0.576	1.000	4.8.2

Reinforcing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L3	62.5 - 32.25	4x1 1/4	30.25	2.00	66.5 K=1.00	5.0000	-162891.00	192094.00	0.848 [1]
L3	32.25 - 0	4.25 x 1.25	32.25	2.00	66.5 K=1.00	5.3125	-203088.00	204100.00	0.995 [1]

[1] P_u / ϕP_n controls

Reinforcing Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L3	62.5 - 32.25	4x1 1/4	0.63	24375.00	0.000	119.22	7617.19	0.016
L3	32.25 - 0	4.25 x 1.25	0.00	27517.08	0.000	0.00	8093.26	0.000

Reinforcing Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L3	62.5 - 32.25	4x1 1/4	0.848	0.000	0.016	0.848 [1]	1.000	4.8.1
L3	32.25 - 0	4.25 x 1.25	0.995	0.000	0.000	0.995 [1]	1.000	4.8.1

[1] P_u / ϕP_n controls

Tension Checks

Reinforcing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L3	62.5 - 32.25	4x1 1/4	30.25	2.00	66.5	4.0625	152251.00	243750.00	0.625 [1]
L3	32.25 - 0	4.25 x 1.25	32.25	2.00	66.5	4.3750	191241.00	262500.00	0.729 [1]

[1] P_u / ϕP_n controls

Reinforcing Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L3	62.5 - 32.25	4x1 1/4	-0.61	24375.00	0.000	144.55	7617.19	0.019
L3	32.25 - 0	4.25 x 1.25	2199.65	27517.08	0.080	0.00	8093.26	0.000

Reinforcing Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L3	62.5 - 32.25	4x1 1/4	0.625	0.000	0.019	0.625 [1]	1.000	4.8.1
L3	32.25 - 0	4.25 x 1.25	0.729	0.080	0.000	0.729 [1]	1.000	4.8.1

[1] P_u / ϕP_n controls

Section Capacity Table

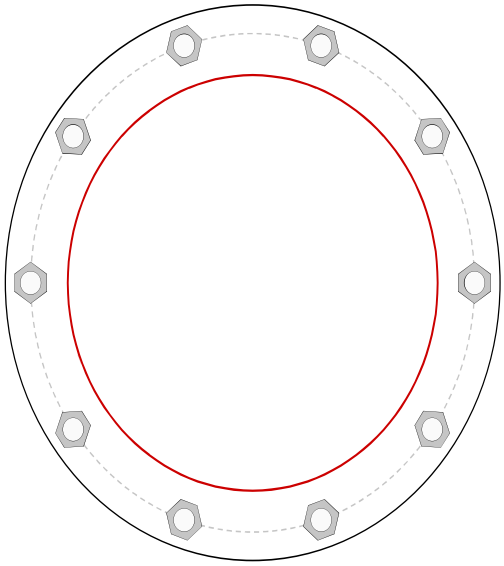
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	102.92 - 90	Pole	TP13x13x0.25	1	-630.70	315436.00	6.5	Pass
L2	90 - 45.08	Pole	TP26.7925x13x0.25	2	-17605.20	1249440.00	82.5	Pass
L3	45.08 - 0	Pole	TP40x25.1134x0.3125	3	87138.00	2302850.00	57.6	Pass
L3	62.5 - 32.25	Reinforcing	4x1 1/4	8	-162891.00	192094.00	84.8	Pass
	32.25 - 0	Reinforcing	4.25 x 1.25	5	-203088.00	204100.00	99.5	Pass
							Summary	
						Pole (L2)	82.5	Pass
						Reinforcing (L3)	99.5	Pass
						RATING =	**99.5**	**Pass**

Monopole Base Plate Connection

Site Info	
Site Name	
Order #	

Analysis Considerations	
TIA-222 Revision	
Grout Considered:	No
l_{ar} (in)	0
Eta Factor, η	0.5

Applied Loads	
Moment (kip-ft)	
Axial Force (kips)	
Shear Force (kips)	



Connection Properties

Anchor Rod Data

(10) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 48" BC

Base Plate Data

53.5" OD x 1.75" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

Pole Data

40" x 0.3125" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_c = 128.19	ϕPn_t = 260	**Stress Rating**
Vu = 2.14	ϕVn = n/a	
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	(Flexural)
Allowable Stress (ksi):	
Stress Rating:	**Pass**

Analysis Date: 10/27/2021

Drilled Pier Foundation

BU # :	
Site Name:	CTFF899A
Order Number:	

TIA-222 Revison:	G
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	1274.97	
Axial Force (kips)	8.07	
Shear Force (kips)	21.42	

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	15	ft
Ext. Above Grade	1	ft
Pier Section 1		
From 1' above grade to 15' below grade		
Pier Diameter	6	ft
Rebar Quantity	14	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	4	

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	10.13	-
Soil Safety Factor	3.97	-
Max Moment (kip-ft)	1498.98	-
Rating	*33.5%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	549.65	-
End Bearing (kips)	508.94	-
Weight of Concrete (kips)	81.43	-
Total Capacity (kips)	1058.59	-
Axial (kips)	89.50	-
Rating	*8.5%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	10.15	-
Critical Moment (kip-ft)	1498.93	-
Critical Moment Capacity	3053.24	-
Rating	*49.1%*	-

Soil Interaction Rating	**33.5%**
Structural Foundation Rating	**49.1%**

Check Limitation	
N/A	☑
Load Z Normalization:	☐

Soil Profile

Groundwater Depth	N/A	ft	# of Layers	2

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	9	9	100	150	0	0	0.000	0.000					Cohesionless
2	9	15	6	170	150	14.4	0	6.480	6.480			24		Cohesive

Exhibit E

Mount Analysis Report

CENTERLINE COMMUNICATIONS
750 West Center Street, Suite 301
West Bridgewater, MA 02379
781.713.4725

Revised Mount Analysis Report

Site Address	623-627 Honeyspot Road Stratford, CT 06615
Site Name	CTFF899A
Site ID	CTFF899A
Project Name	Sprint Retain
Design Codes	2015 International Building Code ASCE 7-10 TIA-222-G Standards 2018 CT State Building Code

	Stress Ratio	Overall Result
Proposed Mount	**94%**	**PASS**

Client:

T - Mobile

NORTHEAST, LLC
35 GRIFFIN RD S
BLOOMFIELD, CT 06002

STATE OF CONNECTICUT
DEREK J. CREASER
LICENSED
PROFESSIONAL ENGINEER

Date: 10/27/2021 Rev. 1
10/11/2021 Rev. 0

Digitally signed by: Derek J. Creaser, P.E.
DN: CN = Derek J. Creaser, P.E. email = dcreaser@clinellc.com C = US O = Centerline Communications OU = Director - A&E Services
Date: 2021.10.28 13:49:00 -04'00'

Scope of Work:

Centerline Communications was authorized by T-Mobile Northeast LLC to perform an analysis of the proposed antenna mount to determine its capacity to support the proposed T-Mobile equipment listed in this report. These mounts were analyzed using RISA 3D v17.0.4.

Final Appurtenances Configuration:

Elevation (ft)	Position[1]	Azimuth (degrees)	Quantity	Appurtenance	Sector
72	**MP1**	**60**	**1**	**APXVAALL24_43-U-NA20 Antenna**	Sector 1
72	**MP2**	**60**	**1**	**AIR6449 B41 Antenna**	
72	**MP3**	**60**	**1**	**VV-65A-R1 Antenna**	
72	**MP1**	**60**	**1**	**4480 B71+B85 RRH**	
72	**MP3**	**60**	**1**	**4460 B25+B66 RRH**	
72	**MP4**	**150**	**1**	**APXVAALL24_43-U-NA20 Antenna**	Sector 2
72	**MP5**	**150**	**1**	**AIR6449 B41 Antenna**	
72	**MP6**	**150**	**1**	**VV-65A-R1 Antenna**	
72	**MP4**	**150**	**1**	**4480 B71+B85 RRH**	
72	**MP6**	**150**	**1**	**4460 B25+B66 RRH**	
72	**MP7**	**330**	**1**	**APXVAALL24_43-U-NA20 Antenna**	Sector 3
72	**MP8**	**330**	**1**	**AIR6449 B41 Antenna**	
72	**MP9**	**330**	**1**	**VV-65A-R1 Antenna**	
72	**MP7**	**330**	**1**	**4480 B71+B85 RRH**	
72	**MP9**	**330**	**1**	**4460 B25+B66 RRH**	

Notes:

1. MP represent Mount Pipe.
2. Existing Appurtenance
3. **Proposed Appurtenance**

Design Criteria:

Design Codes:

2015 International Building Code
ASCE 7-10
TIA-222-G Standards
2018 CT State Building Code

Ultimate Wind Speed	125 mph
Nominal Wind Speed	97 mph
Wind Speed with Ice	50 mph
Ice Thickness	0.75 in.
Exposure Category	C
Topographic Category	1
Structure Class	II
Site Soil Class (Assumed)	D-Stiff Soil
Seismic Design Category	B
Spectral Response Acceleration Parameter at a Short Periods, S_S	0.201 g
Spectral Response Acceleration Parameter at a Period of 1 Second, S_1	0.064 g
Short Period Site Coefficient, F_a	1.6
Long Period Site Coefficient, F_v	2.4

***Refer to calculations for additional design criteria.**

Conclusion:

Based on the results of the analysis, we have determined that the proposed T-Mobile mount *is adequate* to support the proposed T-Mobile equipment loading. Please see Centerline Communications drawings for details.

- Install (1) Site Pro 1 F4P-8W Quad-Platform Mount with (1) Site Pro 1 F4P-HRK8 handrail kit.

	Stress Ratio	Overall Result
Proposed Mount	**94%**	**PASS**

Reference Documents:

- T-Mobile RFDS CTFF899A_Sprint Retain_1_draft, dated 10/14/2021
- Structural Analysis by Paul J. Ford & Company, dated 02/04/2021

Assumptions and Limitations:

- The calculations performed by Centerline Communications are limited to the structural members in these calculations only.
- Structural calculations in this report do not check the adequacy of the supporting structure, other mounts, or coax mounting attachments.
- The calculation assumes all structural members to be in good condition i.e. no damage, rust, or other defects.

Photos:

Existing Mount

Design Calculations

CENTERLINE COMMUNICATIONS

750 West Center Street, Suite 301
West Bridgewater, MA 02379
781.713.4725

Site Details	
Site Name	CTFF899A
Carrier	T-Mobile
City, State	Stratford, CT
Project	Sprint Retain

Mount Details		
Mount Type	4-Sided Platform	
Mount Height, z	72	ft
Number of Sectors	3	
Tower Type	Monopole	
Tower Height, h	100	ft

Topographic Factors		
Topographic Category	1	
Feature	Flat	
Crest Height, H	N/A	ft
Distance from Crest, x	N/A	ft
Slope (H/L)	N/A	
Topographic Factor, K_{zt}	1.00	

Seismic Factors		
Importance Factor, I_E	1	
Short Period Spectral Acceleration, S_s	0.201	g
1 Second Period Spectral Acceleration, S_1	0.064	g
Long-Period Transition Period, T_L	6	
Design Category	B	
Short Period Site Coefficient, F_a	1.60	
Long-Period Site Coefficient, F_v	2.4	

Site Parameters		
Ultimate Wind Speed, V_{ULT}	125	mph
Nominal Wind Speed, V	97	mph
Wind Speed with Ice, V_i	50	mph
Design Ice Thickness, t_i	0.75	in
Structural Class	II	
Exposure Category	C	
Site Soil Class	D-Stiff Soil (Assumed)	

Code	
Building Code	2015 IBC
TIA Code	TIA-222-G
ASCE Code	7-10

Site Constants		
Importance Factor, I (Wind no Ice)	1.00	
Importance Factor, I (Ice Thickness)	1.00	
Importance Factor, I (wind with Ice)	1.00	
Wind Direction Prob. Factor, K_d	0.95	
Velocity Pressure Coefficient, K_z	1.18	
Gust Effect Factor, G_h	1.00	
Design Ice Thickness, t_{iz}	1.62	in
Velocity Pressure, q_z	27.03	psf
Velocity Pressure with Ice, q_{zi}	7.18	psf
Shielding Factor, K_a	1.00	
Flat Velocity Pressure (Ca =2.0)	54.05	psf
Round Velocity Pressure (Ca = 1.2)	32.43	psf
Round Velocity Pressure with Ice (Ca = 1.2)	8.62	psf
Engineer Initials	**AP**	

CENTERLINE COMMUNICATIONS

750 West Center Street, Suite 301
West Bridgewater, MA 02379
781.713.4725

Members Forces							
Member Label	**Shape**	**Type**	**w, lbs/ft**	**q_z, psf**	**w_i, lbs/ft**	**q_{zi}, psf**	**V_s, lbs/ft**
L3x3x6	L3X3X6	Beam	7.18	54.05	11.62	8.62	1.03
HSS4x3x4	HSS4X3X4	Beam	9.90	54.05	13.12	8.62	1.42
Pipe_2.5	PIPE_2.5	Beam	5.48	32.43	8.91	8.62	0.78
3/8x3	3/8 x 3	Beam	3.83	54.05	9.20	8.62	0.55
.5 x 2 3/8 "	.5 x 2 3/8 "	Beam	4.04	54.05	8.02	8.62	0.58
3/8 x 1"	3/8 x 1"	Beam	1.28	54.05	5.33	8.62	0.18
3/8 x4	3/8 x 4	Beam	5.10	54.05	11.17	8.62	0.73
.875x.375	.875 x .375	Beam	1.12	54.05	5.10	8.62	0.16
.5"x4"	.5" x 4"	Beam	6.81	54.05	11.20	8.62	0.97
3/4x3/8	3/4 x 3/8	Beam	0.96	54.05	4.87	8.62	0.14
3/8 x 5/8	3/8 x 5/8	Beam	0.80	54.05	4.66	8.62	0.11
Pipe_2.0	PIPE_2.0	Beam	3.47	32.43	7.92	8.62	0.50
Pipe_1.5	PIPE_1.5	Beam	2.55	32.43	6.98	8.62	0.36
3/16 x1 1/2	3/16 X 1 1/2	Beam	0.96	54.05	6.21	8.62	0.14

CENTERLINE COMMUNICATIONS

750 West Center Street, Suite 301
West Bridgewater, MA 02379
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Sector 1							
		Wind Force				Dimensions	Weights
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	H\W\D, in	Wt.\$Wt._{ice}$, lbs.
APXVAALL24_43-U-NA20 Antenna	72	20.24	8.73	547.07	236.02	95.9\24\8.5	153.3\393.93
AIR6449 B41 Antenna	72	5.68	2.49	153.56	67.31	33.1\20.6\8.6	104\142.56
VV-65A-R1 Antenna	72	5.93	2.75	160.15	74.40	54.724\12.087\4.646	23.81\127.62
4480 B71+B85 RRH	72	2.45	1.27	66.31	34.25	19.5\15.1\7.8	87\74.88
4460 B25+B66 RRH	72	2.14	1.50	57.81	40.47	15.1\17\11.9	108\83.24

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Sector 1 Continue…								
		Wind Force with Ice				Wind Force V = 30 mph		Seismic Force
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	0° Force lbs.	90° Force lbs.	Vs, lbs
APXVAALL24_43-U-NA20 Antenna	72	13.60	6.73	243.05	111.02	52.33	22.58	21.91
AIR6449 B41 Antenna	72	4.21	2.13	71.05	33.18	14.69	6.44	14.87
VV-65A-R1 Antenna	72	4.50	2.57	74.84	38.19	15.32	7.12	3.40
4480 B71+B85 RRH	72	2.03	1.22	32.18	17.87	6.34	3.28	12.44
4460 B25+B66 RRH	72	1.81	1.35	28.32	20.45	5.53	3.87	15.44

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Sector 2							
		Wind Force				Dimensions	Weights
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	H\W\D, in	Wt.\$Wt._{ice}$, lbs.
APXVAALL24_43-U-NA20 Antenna	72	20.24	8.73	236.02	547.07	95.9\24\8.5	153.3\393.93
AIR6449 B41 Antenna	72	5.68	2.49	67.31	153.56	33.1\20.6\8.6	104\142.56
VV-65A-R1 Antenna	72	5.93	2.75	74.40	160.15	54.724\12.087\4.646	23.81\127.62
4480 B71+B85 RRH	72	2.45	1.27	34.25	66.31	19.5\15.1\7.8	87\74.88
4460 B25+B66 RRH	72	2.14	1.50	40.47	57.81	15.1\17\11.9	108\83.24

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Sector 2 Continue…								
		Wind Force with Ice				Wind Force V = 30 mph		Seismic Force
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	0° Force lbs.	90° Force lbs.	Vs, lbs
APXVAALL24_43-U-NA20 Antenna	72	13.60	6.73	111.02	243.05	22.58	52.33	21.91
AIR6449 B41 Antenna	72	4.21	2.13	33.18	71.05	6.44	14.69	14.87
VV-65A-R1 Antenna	72	4.50	2.57	38.19	74.84	7.12	15.32	3.40
4480 B71+B85 RRH	72	2.03	1.22	17.87	32.18	3.28	6.34	12.44
4460 B25+B66 RRH	72	1.81	1.35	20.45	28.32	3.87	5.53	15.44

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Sector 3							
		Wind Force				Dimensions	Weights
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	H\W\D, in	Wt.\$Wt._{ice}$, lbs.
APXVAALL24_43-U-NA20 Antenna	72	20.24	8.73	236.02	547.07	95.9\24\8.5	153.3\393.93
AIR6449 B41 Antenna	72	5.68	2.49	67.31	153.56	33.1\20.6\8.6	104\142.56
VV-65A-R1 Antenna	72	5.93	2.75	74.40	160.15	54.724\12.087\4.646	23.81\127.62
4480 B71+B85 RRH	72	2.45	1.27	34.25	66.31	19.5\15.1\7.8	87\74.88
4460 B25+B66 RRH	72	2.14	1.50	40.47	57.81	15.1\17\11.9	108\83.24

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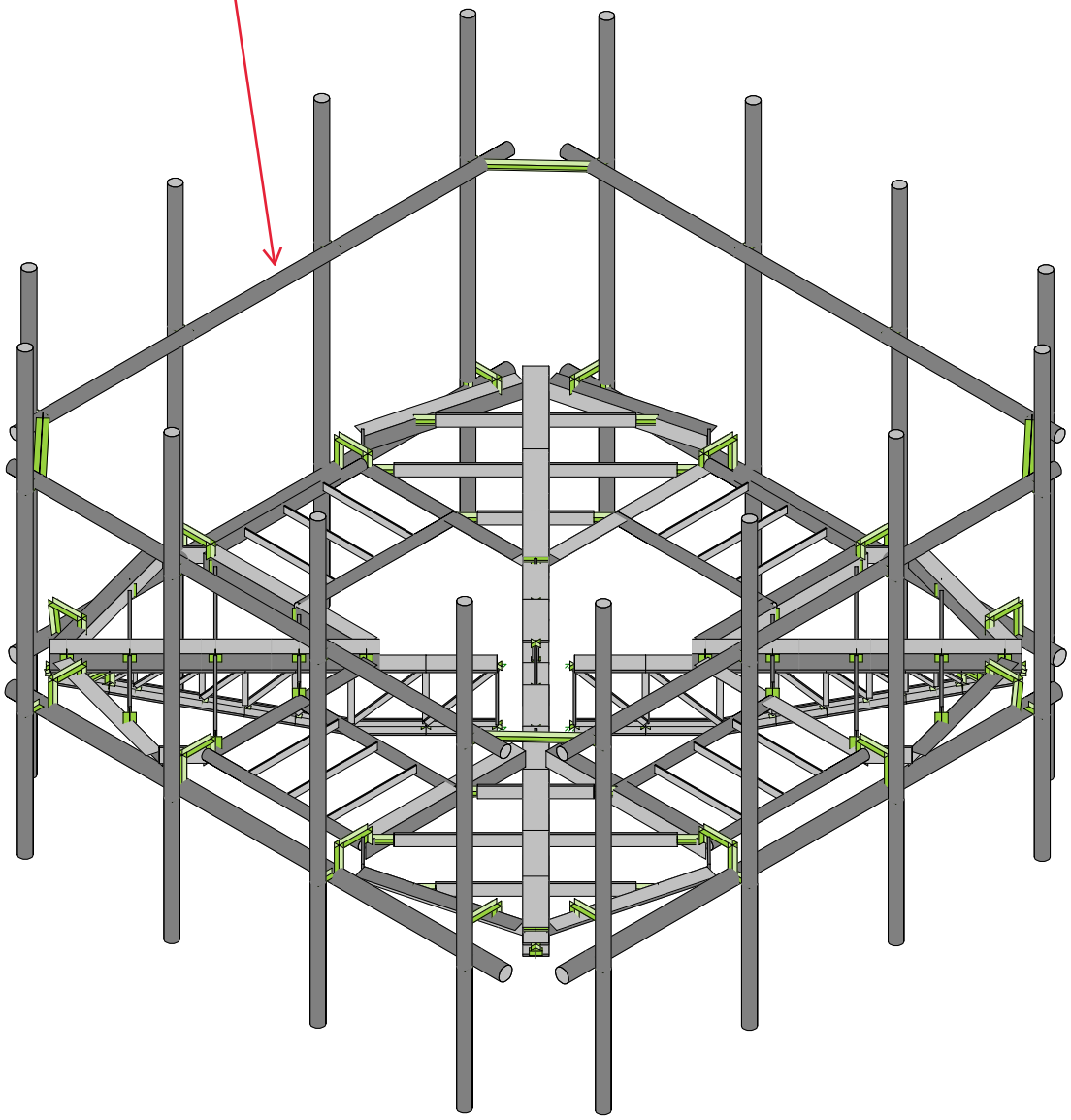
Sector 3 Continue…								
		Wind Force with Ice				Wind Force V = 30 mph		Seismic Force
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	0° Force lbs.	90° Force lbs.	Vs, lbs
APXVAALL24_43-U-NA20 Antenna	72	13.60	6.73	111.02	243.05	22.58	52.33	21.91
AIR6449 B41 Antenna	72	4.21	2.13	33.18	71.05	6.44	14.69	14.87
VV-65A-R1 Antenna	72	4.50	2.57	38.19	74.84	7.12	15.32	3.40
4480 B71+B85 RRH	72	2.03	1.22	17.87	32.18	3.28	6.34	12.44
4460 B25+B66 RRH	72	1.81	1.35	20.45	28.32	3.87	5.53	15.44

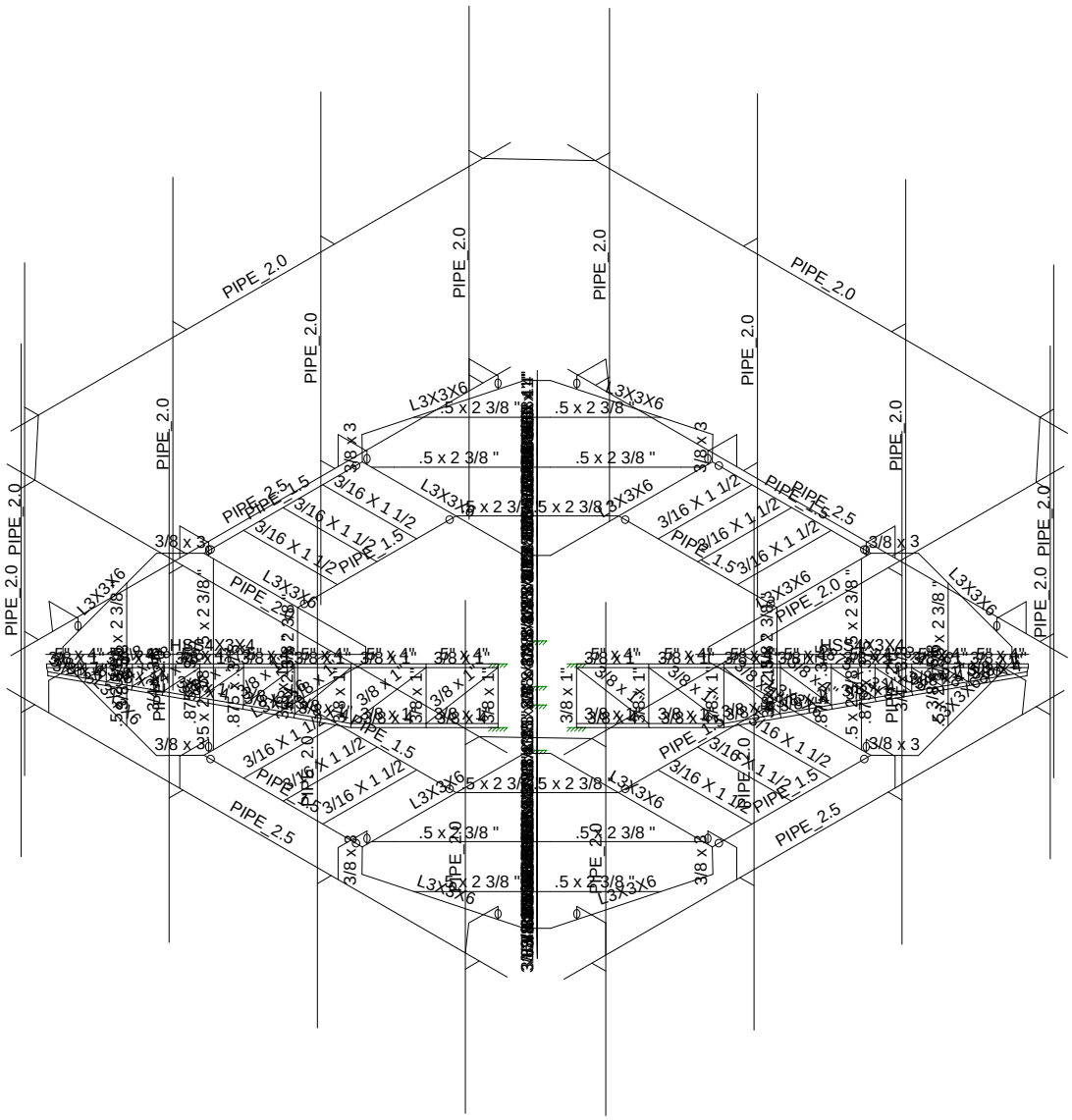
Proposed Mount Results

Install (1) Site Pro 1 F4P-8W Quad-Platform Mount with (1) Site Pro 1 F4P-HRK8 handrail kit.



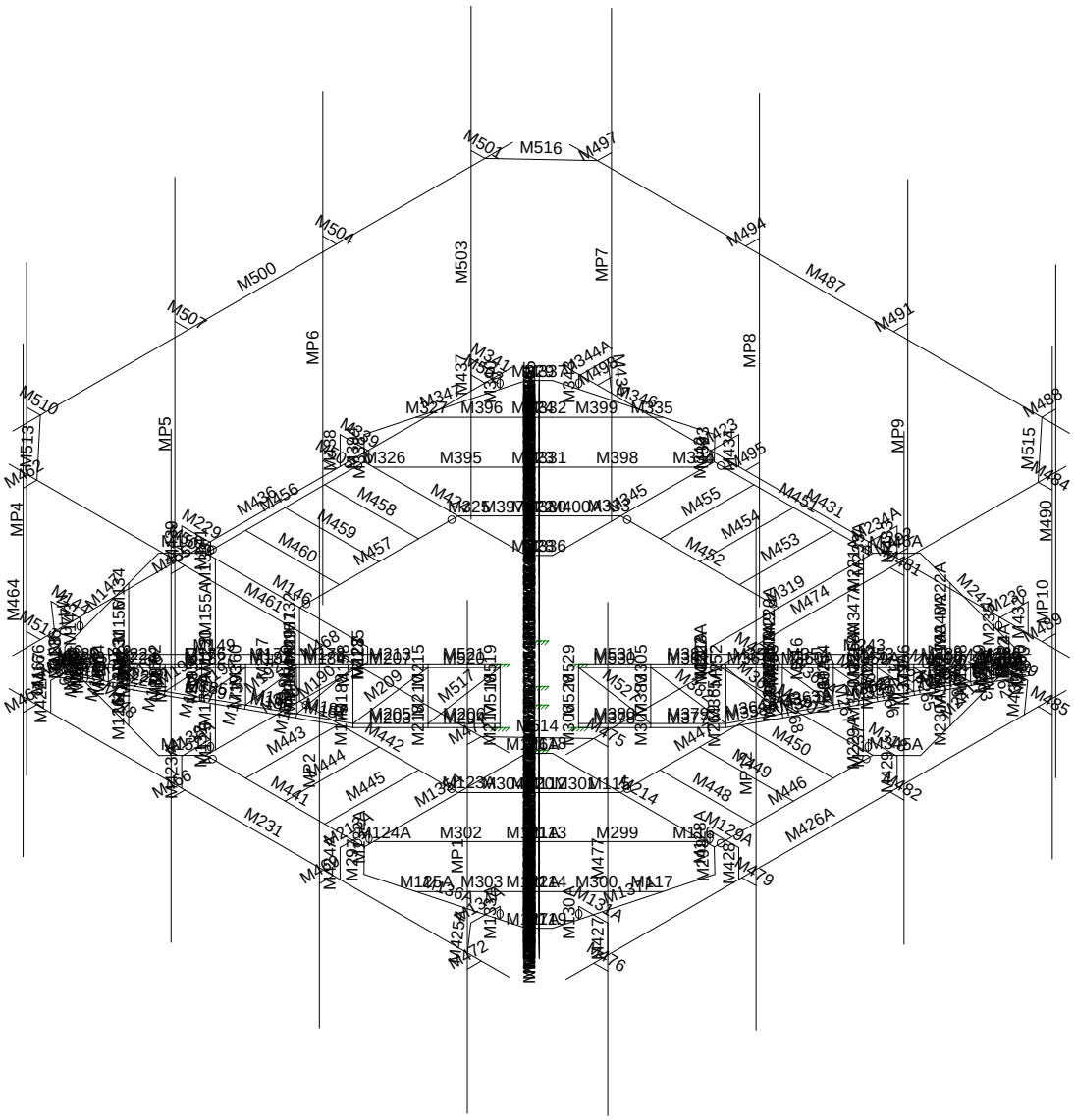
Envelope Only Solution

Valmont SP1		SK - 1
JET	F4P-12	Oct 27, 2021 at 2:21 PM
	RENDERING	CTFF899A_MA.r3d



Envelope Only Solution

Valmont SP1		SK - 2
JET	F4P-12	Oct 27, 2021 at 2:22 PM
	SHAPE	CTFF899A_MA.r3d



Envelope Only Solution

Valmont SP1		SK - 3
JET	F4P-12	Oct 27, 2021 at 2:22 PM
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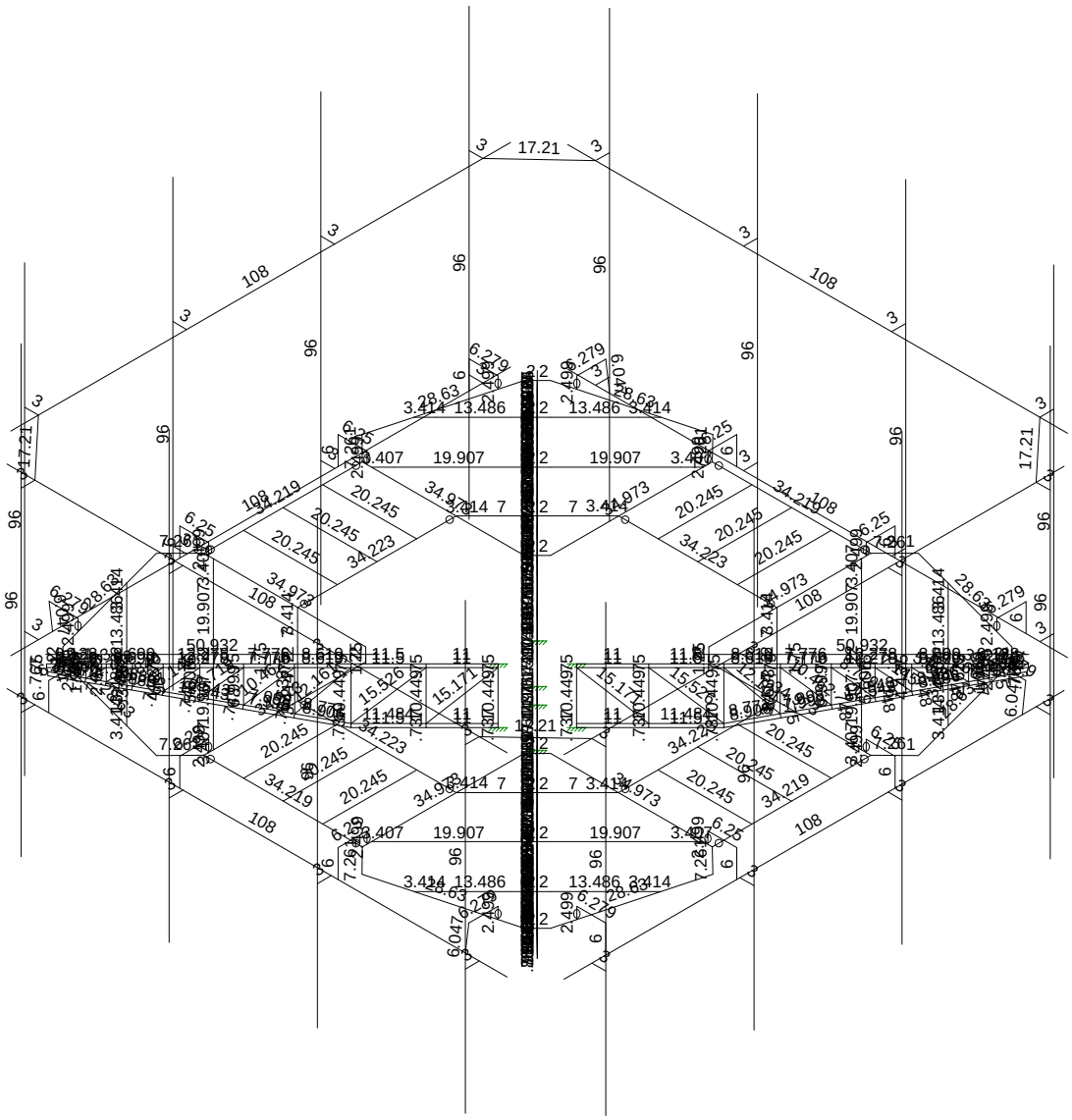

Member Length (in) Displayed
Envelope Only Solution

Valmont SP1		SK - 4
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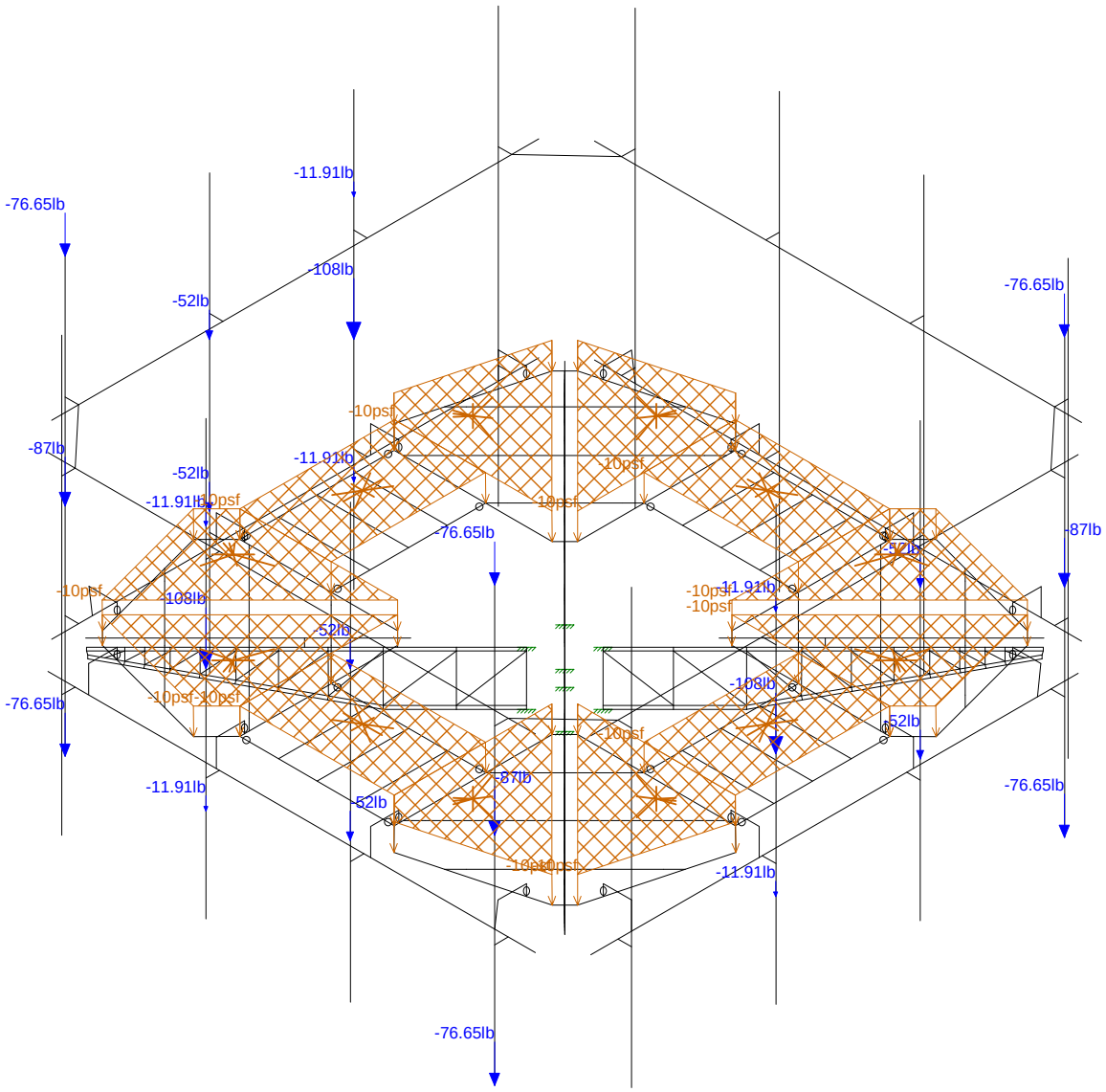
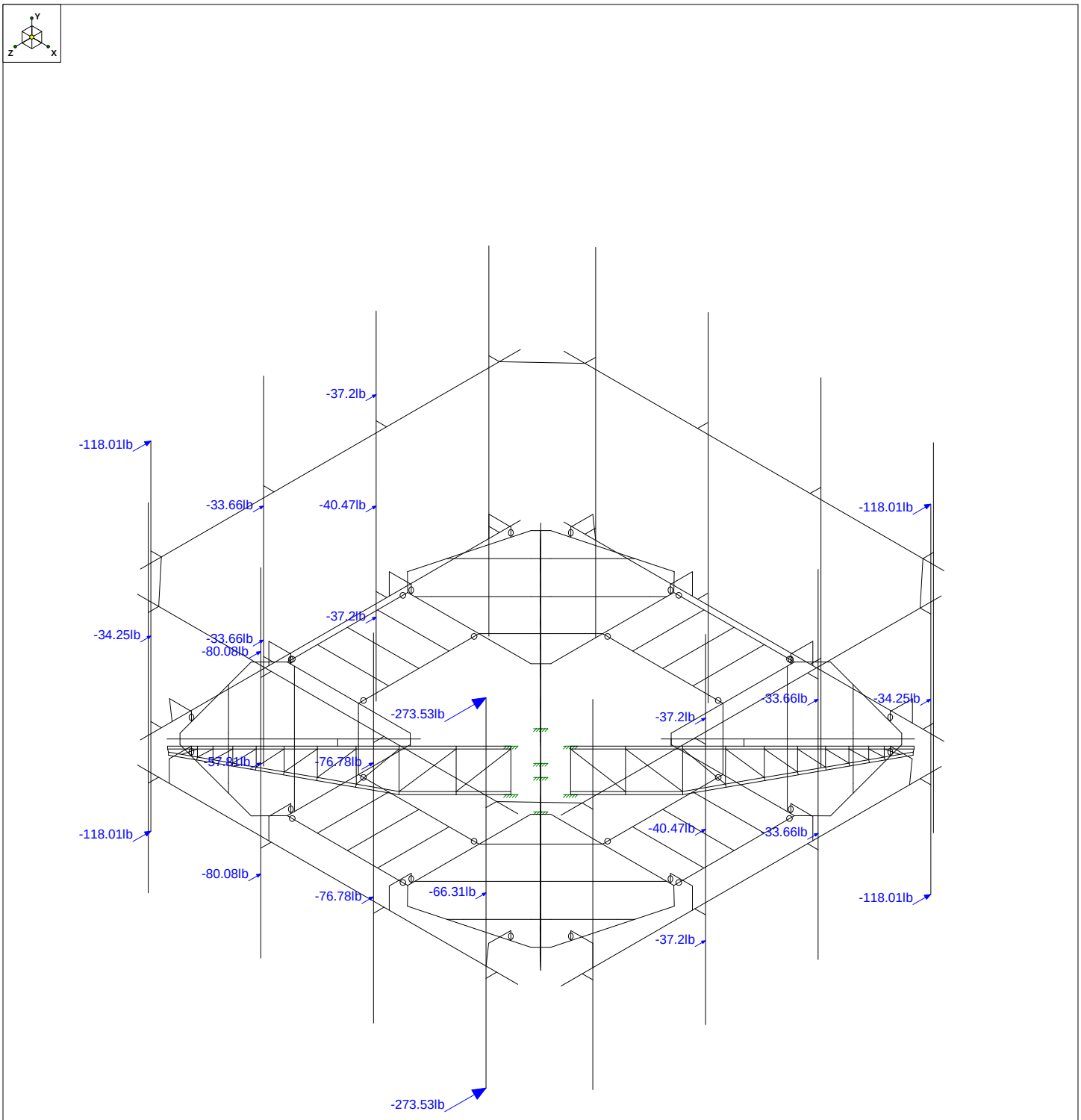


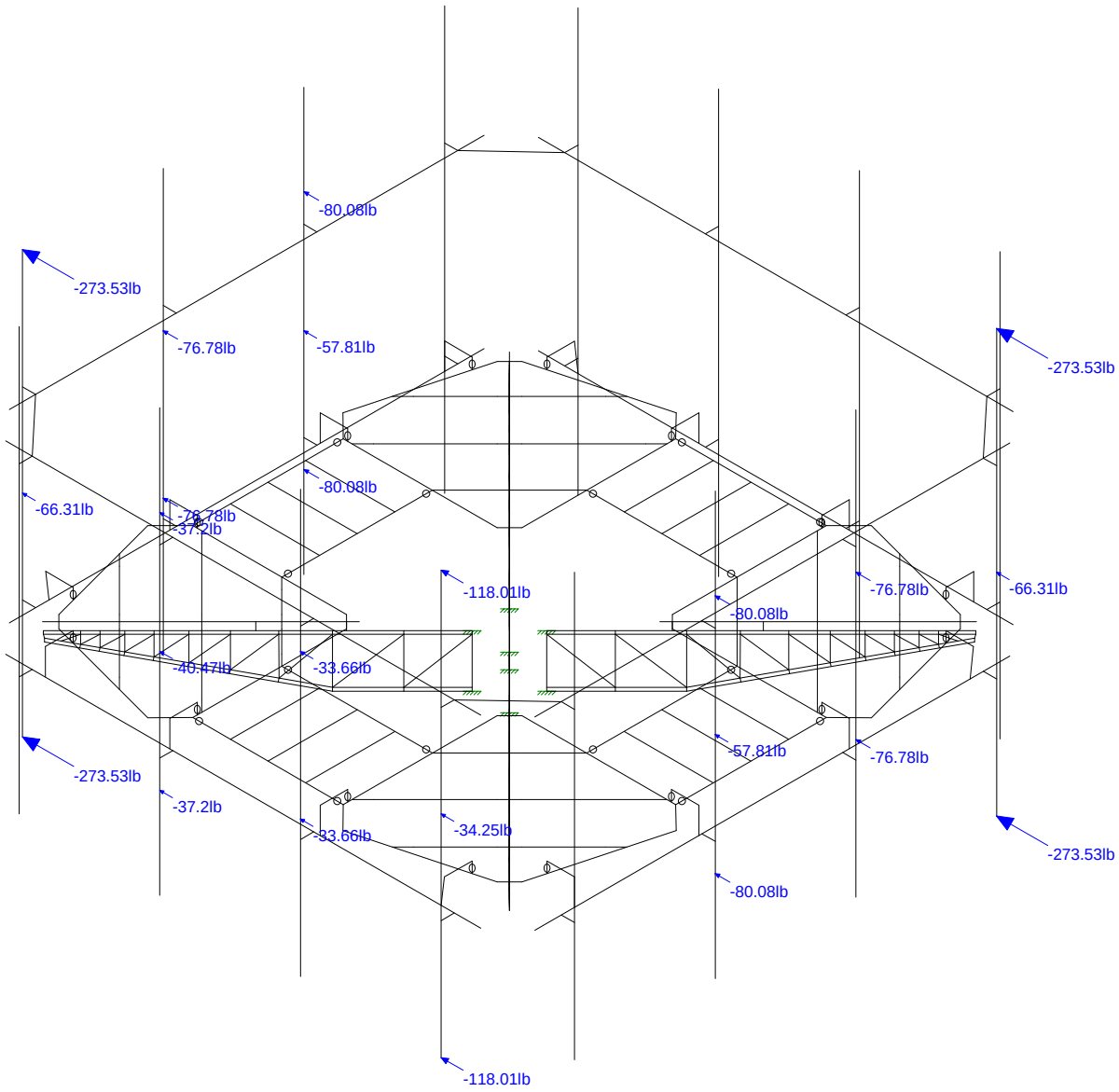
Loads: BLC 1, Dead Load
Envelope Only Solution

Valmont SP1		SK - 5
JET	F4P-12	Oct 27, 2021 at 2:22 PM
	DEAD LOAD	CTFF899A_MA.r3d



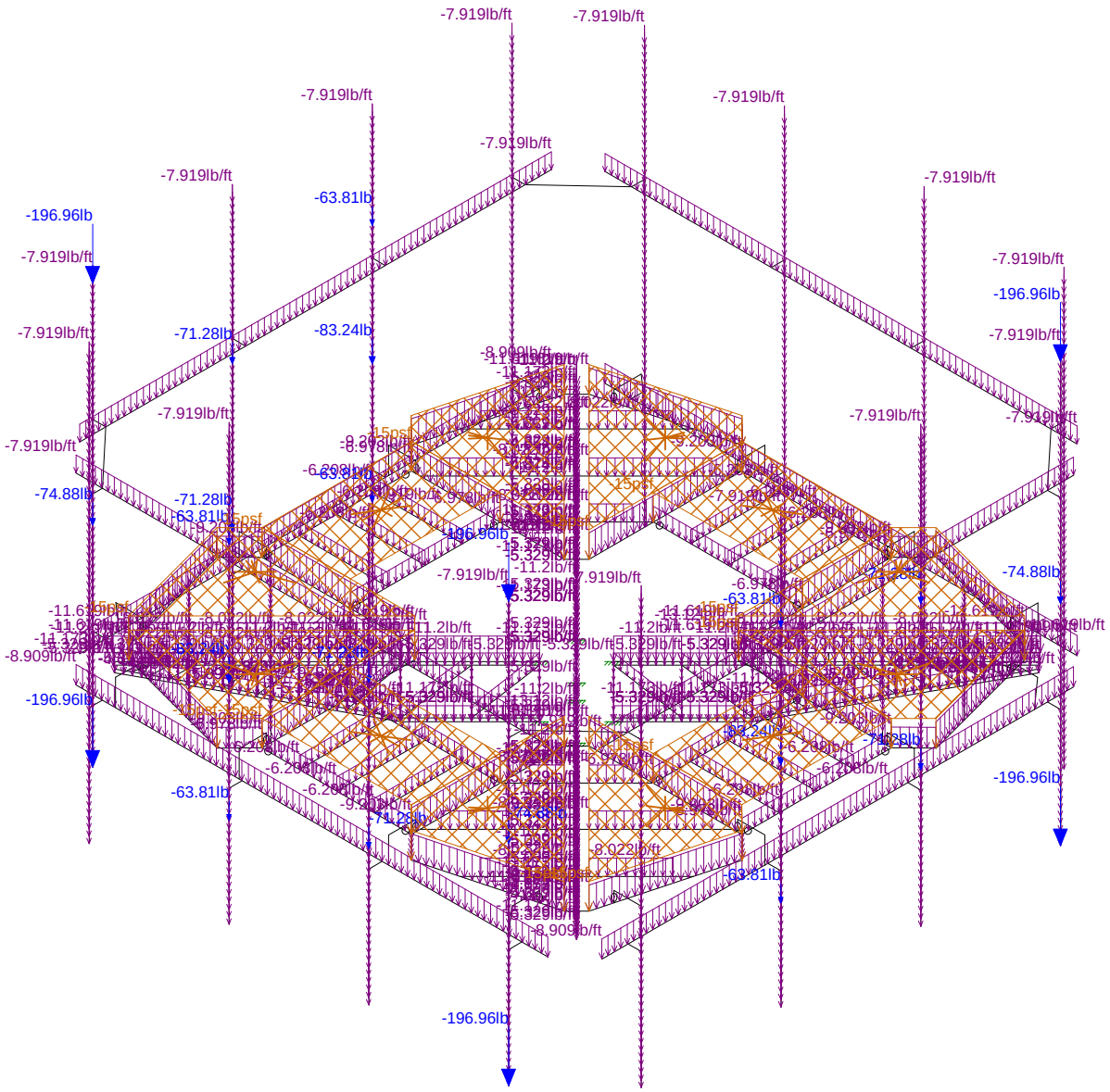
Loads: BLC 2, Wind 0
Envelope Only Solution

Valmont SP1		SK - 6
JET	F4P-12	Oct 27, 2021 at 2:23 PM
	WIND LOAD 0	CTFF899A_MA.r3d



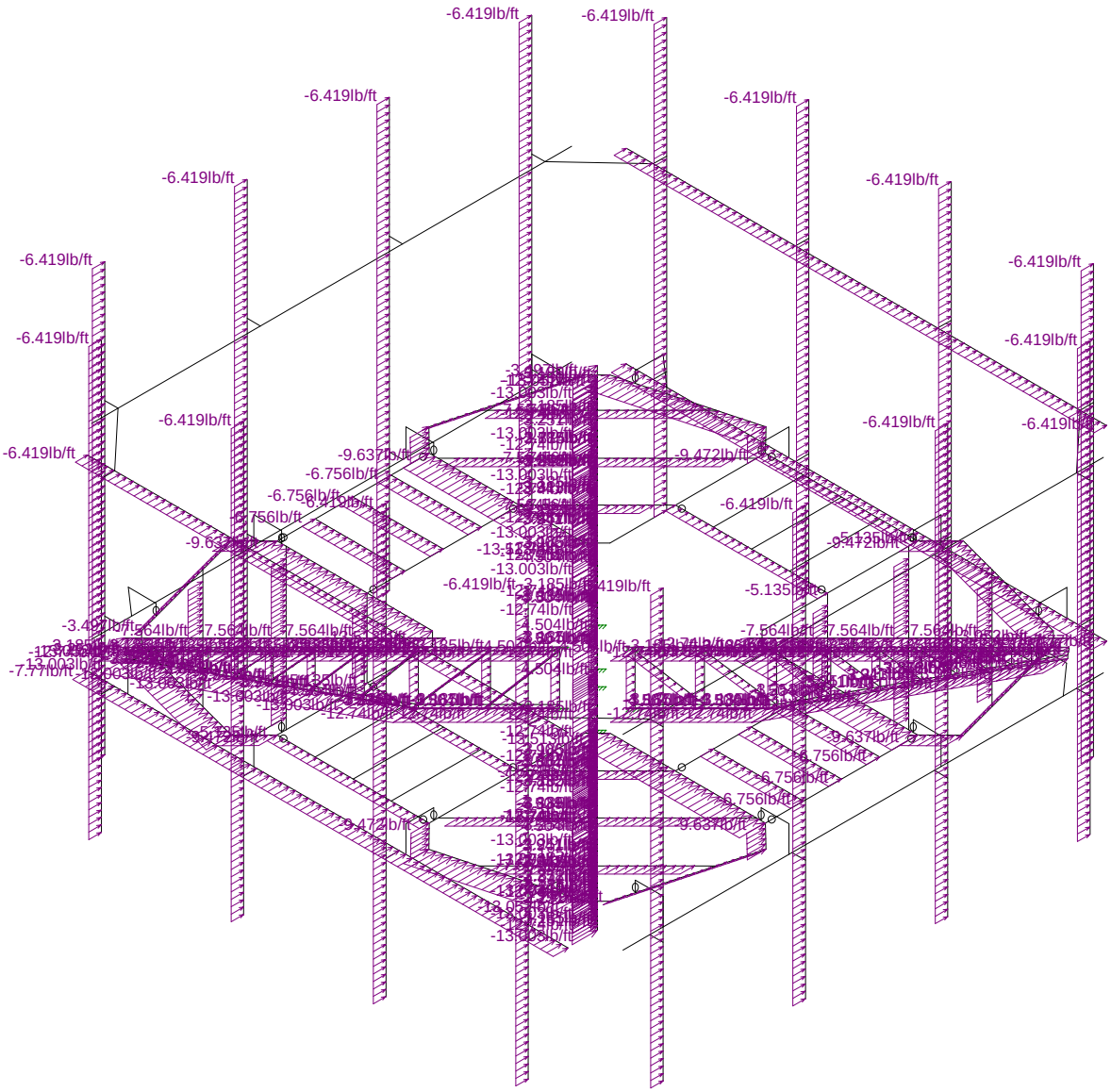
Loads: BLC 5, Wind 90
Envelope Only Solution

Valmont SP1		SK - 7
JET	F4P-12	Oct 27, 2021 at 2:23 PM
	WIND LOAD 90	CTFF899A_MA.r3d



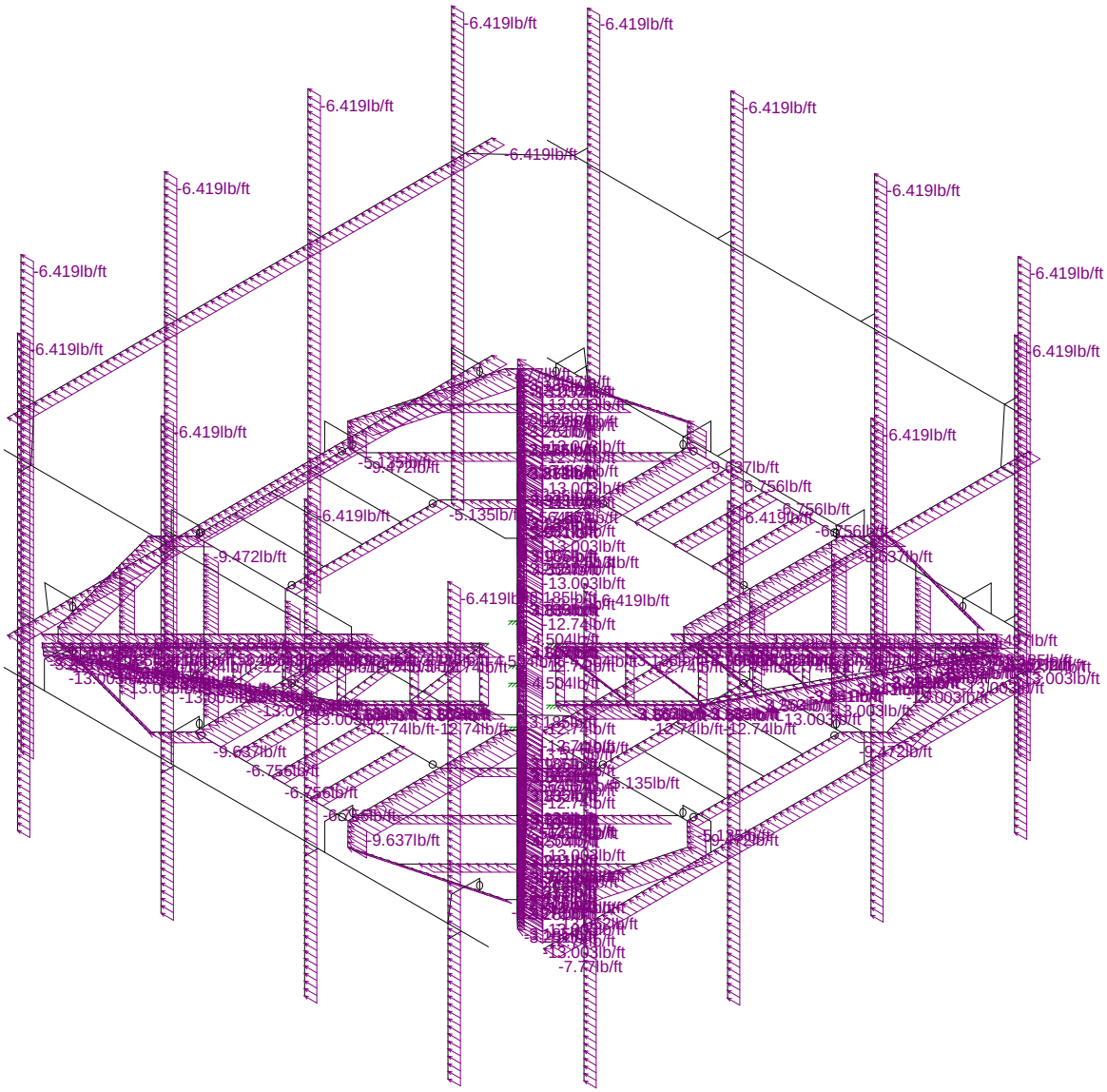
Loads: BLC 9, Ice Weight
Envelope Only Solution

Valmont SP1		SK - 8
JET	F4P-12	Oct 27, 2021 at 2:23 PM
	ICE WEIGHT	CTFF899A_MA.r3d



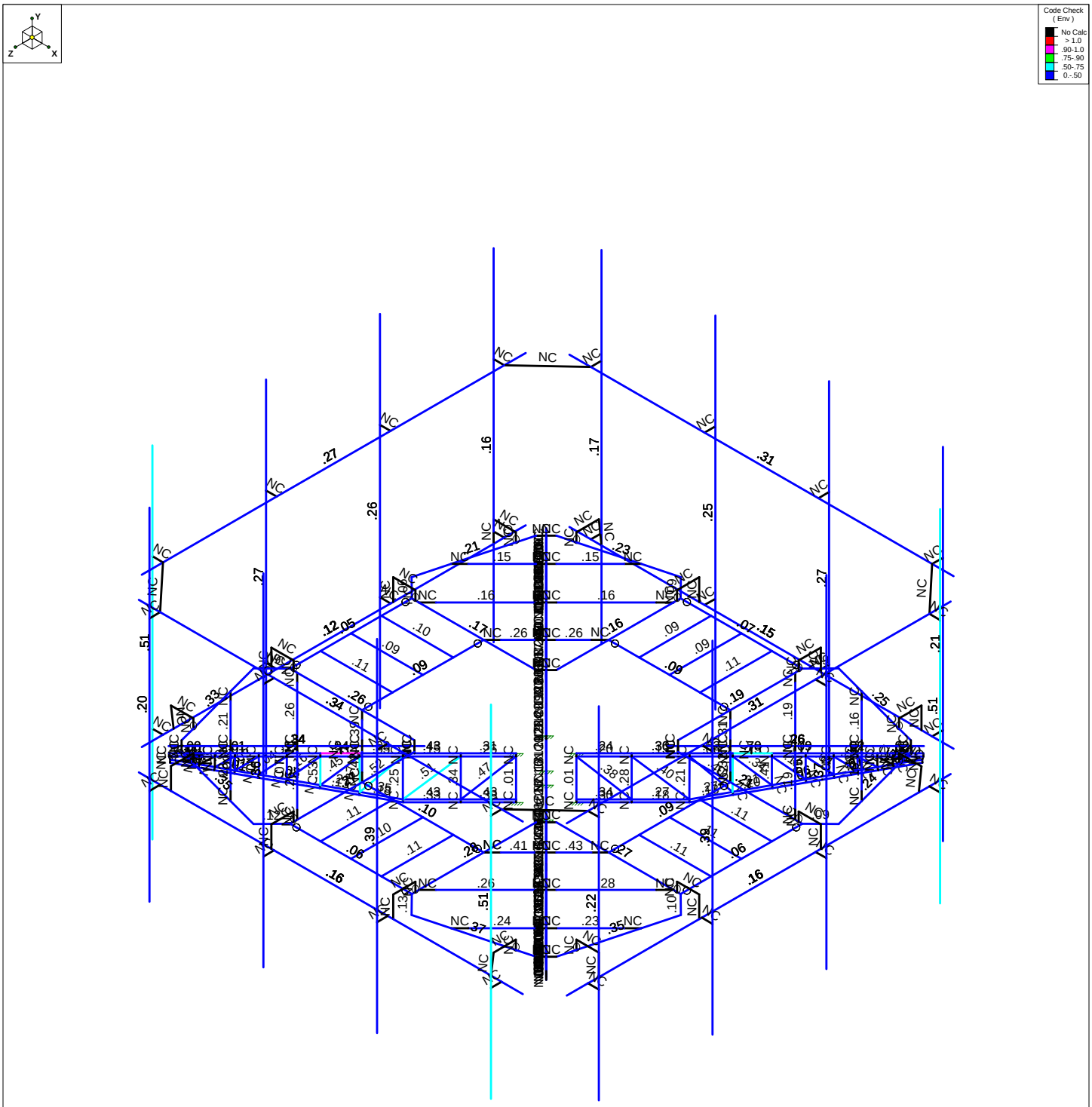
Loads: BLC 17, Distri. Wind Z
Envelope Only Solution

Valmont SP1		SK - 9
JET	F4P-12	Oct 27, 2021 at 2:23 PM
	DISTRI. WIND Z	CTFF899A_MA.r3d



Loads: BLC 18, Distri. Wind X
Envelope Only Solution

Valmont SP1		SK - 10
JET	F4P-12	Oct 27, 2021 at 2:24 PM
	DISTRI. WIND X	CTFF899A_MA.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Valmont SP1		SK - 11
JET	F4P-12	Oct 27, 2021 at 2:24 PM
	MEMBER BENDING	CTFF899A_MA.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Densit...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	490	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	490	50	1.4	65	1.3
8	Q235	29000	11154	.3	.65	490	35	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	L3x3x6	L3X3X6	Beam	Single Angle	Q235	Typical	2.11	1.75	1.75	.101
2	HSS4x3x4	HSS4X3X4	Beam	Tube	Q235	Typical	2.91	3.91	6.15	7.96
3	Pipe_2.5	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
4	3/8x3	3/8 x 3	Beam	RECT	Q235	Typical	1.125	.013	.844	.049
5	.5 x 2 3/8 "	.5 x 2 3/8 "	Beam	RECT	Q235	Typical	1.188	.025	.558	.086
6	3/8 x 1"	3/8 x 1"	Beam	RECT	Q235	Typical	.375	.004	.031	.013
7	3/8 x4	3/8 x 4	Beam	RECT	Q235	Typical	1.5	.018	2	.066
8	.875x.375	.875 x .375	Beam	RECT	Q235	Typical	.328	.004	.021	.011
9	.5"x4"	.5" x 4"	Beam	RECT	Q235	Typical	2	.042	2.667	.154
10	3/4x3/8	3/4 x 3/8	Beam	RECT	Q235	Typical	.281	.003	.013	.009
11	3/8 x 5/8	3/8 x 5/8	Beam	RECT	Q235	Typical	.234	.003	.008	.007
12	Pipe_2.0	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
13	Pipe_1.5	PIPE_1.5	Beam	Pipe	A53 Gr.B	Typical	.749	.293	.293	.586
14	3/16 x1 1/2	3/16 X 1 1/2	Beam	RECT	Q235	Typical	.282	.000831	.053	.003

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N117	-17.095014	1.5	17.095014	0	
2	N118	-53.109376	1.5	53.109376	0	
3	N119	-36.584644	1.5	36.584644	0	
4	N120	-25.889654	1.5	25.889654	0	
5	N121	-19.525693	1.5	32.253615	0	
6	N122	-35.011332	1.5	35.011332	0	
7	N123	-44.367769	1.5	44.367769	0	
8	N124	-19.520744	1.5	50.50192	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
9	N125	-33.417513	1.5	55.318024	0	
10	N126	-24.475441	1.5	27.303868	0	
11	N127	-33.597118	1.5	36.425545	0	
12	N128	-42.953555	1.5	45.781982	0	
13	N129	-17.111482	1.5	34.667826	0	
14	N130	-17.111482	1.5	52.911181	0	
15	N131	-31.003358	1.5	57.73218	0	
16	N132	-18.525696	1.5	18.525696	0	
17	N133	-51.267151	1.5	51.267151	0	
18	N134	-17.111482	1.5	19.939909	0	
19	N135	-17.109572	1.5	54.913086	0	
20	N136	-49.852937	1.5	52.681364	0	
21	N137	-32.253615	1.5	19.525693	0	
22	N138	-50.50192	1.5	19.520743	0	
23	N139A	-55.318024	1.5	33.417513	0	
24	N140A	-27.303868	1.5	24.475441	0	
25	N141	-36.425545	1.5	33.597118	0	
26	N142	-45.781982	1.5	42.953555	0	
27	N143	-34.667826	1.5	17.111482	0	
28	N144	-52.911181	1.5	17.111482	0	
29	N145	-57.73218	1.5	31.003358	0	
30	N146	-19.939909	1.5	17.111482	0	
31	N147	-54.913086	1.5	17.109572	0	
32	N148	-52.681365	1.5	49.852937	0	
33	N149	-17.109627	1.5	53.912909	0	
34	N150	-17.109627	3.999	53.912909	0	
35	N151	-17.109627	3.999	60.162914	0	
36	N152	-45.391333	3.999	60.162914	0	
37	N153	-60.09137	1.5	22.198889	0	
38	N154	-22.198889	1.5	60.09137	0	
39	N155	-45.363319	1.5	53.884374	0	
40	N156	-45.363319	3.999	53.884374	0	
41	N157	-53.912909	1.5	17.109627	0	
42	N158	-53.912909	3.999	17.109627	0	
43	N159	-60.162914	3.999	17.109627	0	
44	N160	-60.162914	3.999	45.363319	0	
45	N161	-53.884374	1.5	45.363319	0	
46	N162	-53.884374	3.999	45.363319	0	
47	N163	-28.854723	1.5	28.854723	0	
48	N164	-18.525696	-.25	18.525696	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
49	N165	-20.152276	-.25	20.152276	0	
50	N167	-43.763894	-.25	43.763894	0	
51	N168	-53.033009	-.25	53.033009	0	
52	N169	-20.152276	-12.186	20.152276	0	
53	N170	-20.152276	-1	20.152276	0	
54	N171	-26.24701	-.25	26.24701	0	
55	N172	-31.745389	-.25	31.745389	0	
56	N173	-36.467764	-.25	36.467764	0	
57	N174	-40.427511	-.25	40.427511	0	
58	N175	-46.578636	-.25	46.578636	0	
59	N176	-48.780099	-.25	48.780099	0	
60	N177	-26.24701	-1	26.24701	0	
61	N178	-31.745389	-1	31.745389	0	
62	N179	-36.467764	-1	36.467764	0	
63	N180	-40.427511	-1	40.427511	0	
64	N181	-43.763894	-1	43.763894	0	
65	N182	-46.578636	-1	46.578636	0	
66	N183	-48.779645	-1	48.779645	0	
67	N184	-20.14081	-11.448725	20.14081	0	
68	N185	-31.745389	-7.999342	31.745389	0	
69	N186	-26.317036	-10.366243	26.317036	0	
70	N187	-36.57583	-7.33798	36.57583	0	
71	N188	-31.85349	-8.731954	31.85349	0	
72	N189	-40.53555	-6.169122	40.53555	0	
73	N190	-43.871895	-5.184276	43.871895	0	
74	N191	-46.686606	-4.35341	46.686606	0	
75	N192	-48.888046	-3.703573	48.888046	0	
76	N193	-26.20877	-9.632514	26.20877	0	
77	N194	-36.467764	-6.605599	36.467764	0	
78	N195	-40.427511	-5.436935	40.427511	0	
79	N196	-43.763894	-4.452337	43.763894	0	
80	N197	-46.578636	-3.621679	46.578636	0	
81	N198	-48.779645	-2.968924	48.779645	0	
82	N199	-53.033009	-1	53.033009	0	
83	N200	-52.878704	-1.753262	52.878704	0	
84	N201	-52.898122	-2.519851	52.898122	0	
85	N202	-12.020548	-.25	12.020548	0	
86	N203	-12.020548	-12.186	12.020548	0	
87	N204	-12.020548	-1	12.020548	0	
88	N205	-12.020548	-11.448547	12.020548	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
89	R2A	-4.242641	-12.186	4.242641	0	
90	N209A	-4.242641	-11.448547	4.242641	0	
91	N210A	-28.854723	-.25	28.854723	0	
92	N211A	-51.012555	-2.306708	51.012555	0	
93	N212A	-51.011026	-1	51.011026	0	
94	N417A	0	0	0	0	
95	N106	17.095014	1.5	17.095014	0	
96	N107	53.109376	1.5	53.109376	0	
97	N108	36.584644	1.5	36.584644	0	
98	N109	25.889654	1.5	25.889654	0	
99	N110	32.253615	1.5	19.525693	0	
100	N111	35.011332	1.5	35.011332	0	
101	N112	44.367769	1.5	44.367769	0	
102	N113	50.50192	1.5	19.520744	0	
103	N114	55.318024	1.5	33.417513	0	
104	N115	27.303868	1.5	24.475441	0	
105	N116	36.425545	1.5	33.597118	0	
106	N117A	45.781982	1.5	42.953555	0	
107	N118A	34.667826	1.5	17.111482	0	
108	N119A	52.911181	1.5	17.111482	0	
109	N120A	57.73218	1.5	31.003358	0	
110	N121A	18.525696	1.5	18.525696	0	
111	N122A	51.267151	1.5	51.267151	0	
112	N123A	19.939909	1.5	17.111482	0	
113	N124A	54.913086	1.5	17.109572	0	
114	N125A	52.681364	1.5	49.852937	0	
115	N126A	19.525693	1.5	32.253615	0	
116	N127A	19.520743	1.5	50.50192	0	
117	N128A	33.417513	1.5	55.318024	0	
118	N129A	24.475441	1.5	27.303868	0	
119	N130A	33.597118	1.5	36.425545	0	
120	N131A	42.953555	1.5	45.781982	0	
121	N132A	17.111482	1.5	34.667826	0	
122	N133A	17.111482	1.5	52.911181	0	
123	N134A	31.003358	1.5	57.73218	0	
124	N135A	17.111482	1.5	19.939909	0	
125	N136A	17.109572	1.5	54.913086	0	
126	N137A	49.852937	1.5	52.681365	0	
127	N138A	53.912909	1.5	17.109627	0	
128	N139	53.912909	3.999	17.109627	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
129	N140	60.162914	3.999	17.109627	0	
130	N141A	60.162914	3.999	45.391333	0	
131	N142A	22.198889	1.5	60.09137	0	
132	N143A	60.09137	1.5	22.198889	0	
133	N144A	53.884374	1.5	45.363319	0	
134	N145A	53.884374	3.999	45.363319	0	
135	N146A	17.109627	1.5	53.912909	0	
136	N147A	17.109627	3.999	53.912909	0	
137	N148A	17.109627	3.999	60.162914	0	
138	N149A	45.363319	3.999	60.162914	0	
139	N150A	45.363319	1.5	53.884374	0	
140	N151A	45.363319	3.999	53.884374	0	
141	N152A	28.854723	1.5	28.854723	0	
142	N153A	18.525696	-.25	18.525696	0	
143	N154A	20.152276	-.25	20.152276	0	
144	N155A	43.763894	-.25	43.763894	0	
145	N156A	53.033009	-.25	53.033009	0	
146	N157A	20.152276	-12.186	20.152276	0	
147	N158A	20.152276	-1	20.152276	0	
148	N159A	26.24701	-.25	26.24701	0	
149	N160A	31.745389	-.25	31.745389	0	
150	N161A	36.467764	-.25	36.467764	0	
151	N162A	40.427511	-.25	40.427511	0	
152	N163A	46.578636	-.25	46.578636	0	
153	N164A	48.780099	-.25	48.780099	0	
154	N165A	26.24701	-1	26.24701	0	
155	N166	31.745389	-1	31.745389	0	
156	N167A	36.467764	-1	36.467764	0	
157	N168A	40.427511	-1	40.427511	0	
158	N169A	43.763894	-1	43.763894	0	
159	N170A	46.578636	-1	46.578636	0	
160	N171A	48.779645	-1	48.779645	0	
161	N172A	20.14081	-11.448725	20.14081	0	
162	N173A	31.745389	-7.999342	31.745389	0	
163	N174A	26.317036	-10.366243	26.317036	0	
164	N175A	36.57583	-7.33798	36.57583	0	
165	N176A	31.85349	-8.731954	31.85349	0	
166	N177A	40.53555	-6.169122	40.53555	0	
167	N178A	43.871895	-5.184276	43.871895	0	
168	N179A	46.686606	-4.35341	46.686606	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
169	N180A	48.888046	-3.703573	48.888046	0	
170	N181A	26.20877	-9.632514	26.20877	0	
171	N182A	36.467764	-6.605599	36.467764	0	
172	N183A	40.427511	-5.436935	40.427511	0	
173	N184A	43.763894	-4.452337	43.763894	0	
174	N185A	46.578636	-3.621679	46.578636	0	
175	N186A	48.779645	-2.968924	48.779645	0	
176	N187A	53.033009	-1	53.033009	0	
177	N188A	52.878704	-1.753262	52.878704	0	
178	N189A	52.898122	-2.519851	52.898122	0	
179	N190A	12.020548	-.25	12.020548	0	
180	N191A	12.020548	-12.186	12.020548	0	
181	N192A	12.020548	-1	12.020548	0	
182	N193A	12.020548	-11.448547	12.020548	0	
183	N194A	4.242641	-12.186	4.242641	0	
184	N195A	4.242641	-11.448547	4.242641	0	
185	N196A	28.854723	-.25	28.854723	0	
186	N197A	51.012555	-2.306708	51.012555	0	
187	N198A	51.011026	-1	51.011026	0	
188	N200A	17.095014	1.5	-17.095014	0	
189	N201A	53.109376	1.5	-53.109376	0	
190	N202A	36.584644	1.5	-36.584644	0	
191	N203A	25.889654	1.5	-25.889654	0	
192	N204A	19.525693	1.5	-32.253615	0	
193	N205A	35.011332	1.5	-35.011332	0	
194	N206	44.367769	1.5	-44.367769	0	
195	N207	19.520744	1.5	-50.50192	0	
196	N208	33.417513	1.5	-55.318024	0	
197	N209	24.475441	1.5	-27.303868	0	
198	N210	33.597118	1.5	-36.425545	0	
199	N211	42.953555	1.5	-45.781982	0	
200	N212	17.111482	1.5	-34.667826	0	
201	N213	17.111482	1.5	-52.911181	0	
202	N214	31.003358	1.5	-57.73218	0	
203	N215	18.525696	1.5	-18.525696	0	
204	N216	51.267151	1.5	-51.267151	0	
205	N217	17.111482	1.5	-19.939909	0	
206	N218	17.109572	1.5	-54.913086	0	
207	N219	49.852937	1.5	-52.681364	0	
208	N220	32.253615	1.5	-19.525693	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
209	N221	50.50192	1.5	-19.520743	0	
210	N222	55.318024	1.5	-33.417513	0	
211	N223	27.303868	1.5	-24.475441	0	
212	N224	36.425545	1.5	-33.597118	0	
213	N225	45.781982	1.5	-42.953555	0	
214	N226	34.667826	1.5	-17.111482	0	
215	N227	52.911181	1.5	-17.111482	0	
216	N228	57.73218	1.5	-31.003358	0	
217	N229	19.939909	1.5	-17.111482	0	
218	N230	54.913086	1.5	-17.109572	0	
219	N231	52.681365	1.5	-49.852937	0	
220	N232	17.109627	1.5	-53.912909	0	
221	N233	17.109627	3.999	-53.912909	0	
222	N234	17.109627	3.999	-60.162914	0	
223	N235	45.391333	3.999	-60.162914	0	
224	N236	60.09137	1.5	-22.198889	0	
225	N237	22.198889	1.5	-60.09137	0	
226	N238	45.363319	1.5	-53.884374	0	
227	N239	45.363319	3.999	-53.884374	0	
228	N240	53.912909	1.5	-17.109627	0	
229	N241	53.912909	3.999	-17.109627	0	
230	N242	60.162914	3.999	-17.109627	0	
231	N243	60.162914	3.999	-45.363319	0	
232	N244	53.884374	1.5	-45.363319	0	
233	N245	53.884374	3.999	-45.363319	0	
234	N246	28.854723	1.5	-28.854723	0	
235	N247	18.525696	-.25	-18.525696	0	
236	N248	20.152276	-.25	-20.152276	0	
237	N249	43.763894	-.25	-43.763894	0	
238	N250	53.033009	-.25	-53.033009	0	
239	N251	20.152276	-12.186	-20.152276	0	
240	N252	20.152276	-1	-20.152276	0	
241	N253	26.24701	-.25	-26.24701	0	
242	N254	31.745389	-.25	-31.745389	0	
243	N255	36.467764	-.25	-36.467764	0	
244	N256	40.427511	-.25	-40.427511	0	
245	N257	46.578636	-.25	-46.578636	0	
246	N258	48.780099	-.25	-48.780099	0	
247	N259	26.24701	-1	-26.24701	0	
248	N260	31.745389	-1	-31.745389	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
249	N261A	36.467764	-1	-36.467764	0	
250	N262A	40.427511	-1	-40.427511	0	
251	N263	43.763894	-1	-43.763894	0	
252	N264	46.578636	-1	-46.578636	0	
253	N265	48.779645	-1	-48.779645	0	
254	N266	20.14081	-11.448725	-20.14081	0	
255	N267	31.745389	-7.999342	-31.745389	0	
256	N268	26.317036	-10.366243	-26.317036	0	
257	N269	36.57583	-7.33798	-36.57583	0	
258	N270	31.85349	-8.731954	-31.85349	0	
259	N271	40.53555	-6.169122	-40.53555	0	
260	N272	43.871895	-5.184276	-43.871895	0	
261	N273	46.686606	-4.35341	-46.686606	0	
262	N274	48.888046	-3.703573	-48.888046	0	
263	N275	26.20877	-9.632514	-26.20877	0	
264	N276	36.467764	-6.605599	-36.467764	0	
265	N277	40.427511	-5.436935	-40.427511	0	
266	N278	43.763894	-4.452337	-43.763894	0	
267	N279	46.578636	-3.621679	-46.578636	0	
268	N280	48.779645	-2.968924	-48.779645	0	
269	N281	53.033009	-1	-53.033009	0	
270	N282	52.878704	-1.753262	-52.878704	0	
271	N283	52.898122	-2.519851	-52.898122	0	
272	N284	12.020548	-.25	-12.020548	0	
273	N285	12.020548	-12.186	-12.020548	0	
274	N286	12.020548	-1	-12.020548	0	
275	N287	12.020548	-11.448547	-12.020548	0	
276	N288	4.242641	-12.186	-4.242641	0	
277	N289	4.242641	-11.448547	-4.242641	0	
278	N290	28.854723	-.25	-28.854723	0	
279	N291	51.012555	-2.306708	-51.012555	0	
280	N292	51.011026	-1	-51.011026	0	
281	N294	-17.095014	1.5	-17.095014	0	
282	N295	-53.109376	1.5	-53.109376	0	
283	N296	-36.584644	1.5	-36.584644	0	
284	N297	-25.889654	1.5	-25.889654	0	
285	N298	-32.253615	1.5	-19.525693	0	
286	N299	-35.011332	1.5	-35.011332	0	
287	N300	-44.367769	1.5	-44.367769	0	
288	N301	-50.50192	1.5	-19.520744	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
289	N302	-55.318024	1.5	-33.417513	0	
290	N303	-27.303868	1.5	-24.475441	0	
291	N304	-36.425545	1.5	-33.597118	0	
292	N305	-45.781982	1.5	-42.953555	0	
293	N306	-34.667826	1.5	-17.111482	0	
294	N307	-52.911181	1.5	-17.111482	0	
295	N308	-57.73218	1.5	-31.003358	0	
296	N309	-18.525696	1.5	-18.525696	0	
297	N310	-51.267151	1.5	-51.267151	0	
298	N311	-19.939909	1.5	-17.111482	0	
299	N312	-54.913086	1.5	-17.109572	0	
300	N313	-52.681364	1.5	-49.852937	0	
301	N314	-19.525693	1.5	-32.253615	0	
302	N315	-19.520743	1.5	-50.50192	0	
303	N316	-33.417513	1.5	-55.318024	0	
304	N317	-24.475441	1.5	-27.303868	0	
305	N318	-33.597118	1.5	-36.425545	0	
306	N319	-42.953555	1.5	-45.781982	0	
307	N320	-17.111482	1.5	-34.667826	0	
308	N321	-17.111482	1.5	-52.911181	0	
309	N322	-31.003358	1.5	-57.73218	0	
310	N323	-17.111482	1.5	-19.939909	0	
311	N324	-17.109572	1.5	-54.913086	0	
312	N325	-49.852937	1.5	-52.681365	0	
313	N326	-53.912909	1.5	-17.109627	0	
314	N327	-53.912909	3.999	-17.109627	0	
315	N328	-60.162914	3.999	-17.109627	0	
316	N329	-60.162914	3.999	-45.391333	0	
317	N330	-22.198889	1.5	-60.09137	0	
318	N331	-60.09137	1.5	-22.198889	0	
319	N332	-53.884374	1.5	-45.363319	0	
320	N333	-53.884374	3.999	-45.363319	0	
321	N334	-17.109627	1.5	-53.912909	0	
322	N335	-17.109627	3.999	-53.912909	0	
323	N336	-17.109627	3.999	-60.162914	0	
324	N337	-45.363319	3.999	-60.162914	0	
325	N338	-45.363319	1.5	-53.884374	0	
326	N339	-45.363319	3.999	-53.884374	0	
327	N340	-28.854723	1.5	-28.854723	0	
328	N341	-18.525696	-.25	-18.525696	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
329	N342	-20.152276	-.25	-20.152276	0	
330	N343	-43.763894	-.25	-43.763894	0	
331	N344	-53.033009	-.25	-53.033009	0	
332	N345	-20.152276	-12.186	-20.152276	0	
333	N346	-20.152276	-1	-20.152276	0	
334	N347	-26.24701	-.25	-26.24701	0	
335	N348	-31.745389	-.25	-31.745389	0	
336	N349	-36.467764	-.25	-36.467764	0	
337	N350	-40.427511	-.25	-40.427511	0	
338	N351	-46.578636	-.25	-46.578636	0	
339	N352	-48.780099	-.25	-48.780099	0	
340	N353	-26.24701	-1	-26.24701	0	
341	N354	-31.745389	-1	-31.745389	0	
342	N355	-36.467764	-1	-36.467764	0	
343	N356	-40.427511	-1	-40.427511	0	
344	N357	-43.763894	-1	-43.763894	0	
345	N358	-46.578636	-1	-46.578636	0	
346	N359	-48.779645	-1	-48.779645	0	
347	N360	-20.14081	-11.448725	-20.14081	0	
348	N361	-31.745389	-7.999342	-31.745389	0	
349	N362	-26.317036	-10.366243	-26.317036	0	
350	N363	-36.57583	-7.33798	-36.57583	0	
351	N364	-31.85349	-8.731954	-31.85349	0	
352	N365	-40.53555	-6.169122	-40.53555	0	
353	N366	-43.871895	-5.184276	-43.871895	0	
354	N367	-46.686606	-4.35341	-46.686606	0	
355	N368	-48.888046	-3.703573	-48.888046	0	
356	N369	-26.20877	-9.632514	-26.20877	0	
357	N370	-36.467764	-6.605599	-36.467764	0	
358	N371	-40.427511	-5.436935	-40.427511	0	
359	N372	-43.763894	-4.452337	-43.763894	0	
360	N373	-46.578636	-3.621679	-46.578636	0	
361	N374	-48.779645	-2.968924	-48.779645	0	
362	N375	-53.033009	-1	-53.033009	0	
363	N376	-52.878704	-1.753262	-52.878704	0	
364	N377	-52.898122	-2.519851	-52.898122	0	
365	N378	-12.020548	-.25	-12.020548	0	
366	N379	-12.020548	-12.186	-12.020548	0	
367	N380	-12.020548	-1	-12.020548	0	
368	N381	-12.020548	-11.448547	-12.020548	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
369	N382	-4.242641	-12.186	-4.242641	0	
370	N383	-4.242641	-11.448547	-4.242641	0	
371	N384	-28.854723	-.25	-28.854723	0	
372	N385	-51.012555	-2.306708	-51.012555	0	
373	N386	-51.011026	-1	-51.011026	0	
374	N385A	-45.391333	-2.001	60.162914	0	
375	N386A	-54.391333	-2.001	60.162914	0	
376	N387	53.608667	-2.001	60.162914	0	
377	N388	44.608667	-2.001	60.162914	0	
378	N389	-17.109627	-2.001	60.162914	0	
379	N390	17.109627	-2.001	60.162914	0	
380	N384A	60.162914	-2.001	45.391333	0	
381	N385B	60.162914	-2.001	54.391333	0	
382	N386B	60.162914	-2.001	-53.608667	0	
383	N387A	60.162914	-2.001	-44.608667	0	
384	N388A	60.162914	-2.001	17.109627	0	
385	N389A	60.162914	-2.001	-17.109627	0	
386	N394	45.391333	-2.001	-60.162914	0	
387	N395	54.391333	-2.001	-60.162914	0	
388	N396	-53.608667	-2.001	-60.162914	0	
389	N397	-44.608667	-2.001	-60.162914	0	
390	N398	17.109627	-2.001	-60.162914	0	
391	N399	-17.109627	-2.001	-60.162914	0	
392	N404	-60.162914	-2.001	-45.391333	0	
393	N405	-60.162914	-2.001	-54.391333	0	
394	N406	-60.162914	-2.001	53.608667	0	
395	N407	-60.162914	-2.001	44.608667	0	
396	N408	-60.162914	-2.001	-17.109627	0	
397	N409	-60.162914	-2.001	17.109627	0	
398	N398A	-54.391333	39.999	60.162914	0	
399	N399A	53.608667	39.999	60.162914	0	
400	N400	-8.554786	1.5	54.913086	0	
401	N401	-8.554786	1.5	34.667826	0	
402	N402	-0.	1.5	54.913086	0	
403	N403	-0.	1.5	34.667826	0	
404	N404A	8.554786	1.5	54.913086	0	
405	N405A	8.554786	1.5	34.667826	0	
406	N410	54.913086	1.5	8.554786	0	
407	N411	34.667826	1.5	8.554786	0	
408	N412	54.913086	1.5	0.	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
409	N413	34.667826	1.5	0.	0	
410	N414	54.913086	1.5	-8.554786	0	
411	N415	34.667826	1.5	-8.554786	0	
412	N420	8.554786	1.5	-54.913086	0	
413	N421	8.554786	1.5	-34.667826	0	
414	N422	0.	1.5	-54.913086	0	
415	N423	0.	1.5	-34.667826	0	
416	N424	-8.554786	1.5	-54.913086	0	
417	N425	-8.554786	1.5	-34.667826	0	
418	N430	-54.913086	1.5	-8.554786	0	
419	N431	-34.667826	1.5	-8.554786	0	
420	N432	-54.913086	1.5	-0.	0	
421	N433	-34.667826	1.5	-0.	0	
422	N434	-54.913086	1.5	8.554786	0	
423	N435	-34.667826	1.5	8.554786	0	
424	N424A	-48.391333	-2.001	60.162914	0	
425	N425A	-48.391333	39.999	60.162914	0	
426	N426	-48.391333	-2.001	63.162914	0	
427	N427	-48.391333	39.999	63.162914	0	
428	N428	-48.391333	66.999	63.162914	0	
429	N429	-48.391333	-29.001	63.162914	0	
430	N430A	-16.391333	-2.001	60.162914	0	
431	N431A	-16.391333	39.999	60.162914	0	
432	N432A	-16.391333	-2.001	63.162914	0	
433	N433A	-16.391333	39.999	63.162914	0	
434	N434A	-16.391333	66.999	63.162914	0	
435	N435A	-16.391333	-29.001	63.162914	0	
436	N436	15.608667	-2.001	60.162914	0	
437	N437	15.608667	39.999	60.162914	0	
438	N438	15.608667	-2.001	63.162914	0	
439	N439	15.608667	39.999	63.162914	0	
440	N440	15.608667	66.999	63.162914	0	
441	N441	15.608667	-29.001	63.162914	0	
442	N442	47.608667	-2.001	60.162914	0	
443	N443	47.608667	39.999	60.162914	0	
444	N444	47.608667	-2.001	63.162914	0	
445	N445	47.608667	39.999	63.162914	0	
446	N446	47.608667	66.999	63.162914	0	
447	N447	47.608667	-29.001	63.162914	0	
448	N448	60.162914	39.999	54.391333	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
449	N449	60.162914	39.999	-53.608667	0	
450	N450	60.162914	-2.001	48.391333	0	
451	N451	60.162914	39.999	48.391333	0	
452	N452	63.162914	-2.001	48.391333	0	
453	N453	63.162914	39.999	48.391333	0	
454	N454	63.162914	66.999	48.391333	0	
455	N455	63.162914	-29.001	48.391333	0	
456	N456	60.162914	-2.001	16.391333	0	
457	N457	60.162914	39.999	16.391333	0	
458	N458	63.162914	-2.001	16.391333	0	
459	N459	63.162914	39.999	16.391333	0	
460	N460	63.162914	66.999	16.391333	0	
461	N461	63.162914	-29.001	16.391333	0	
462	N462	60.162914	-2.001	-15.608667	0	
463	N463	60.162914	39.999	-15.608667	0	
464	N464	63.162914	-2.001	-15.608667	0	
465	N465	63.162914	39.999	-15.608667	0	
466	N466	63.162914	66.999	-15.608667	0	
467	N467	63.162914	-29.001	-15.608667	0	
468	N468	60.162914	-2.001	-47.608667	0	
469	N469	60.162914	39.999	-47.608667	0	
470	N470	63.162914	-2.001	-47.608667	0	
471	N471	63.162914	39.999	-47.608667	0	
472	N472	63.162914	66.999	-47.608667	0	
473	N473	63.162914	-29.001	-47.608667	0	
474	N474	54.391333	39.999	-60.162914	0	
475	N475	-53.608667	39.999	-60.162914	0	
476	N476	48.391333	-2.001	-60.162914	0	
477	N477	48.391333	39.999	-60.162914	0	
478	N478	48.391333	-2.001	-63.162914	0	
479	N479	48.391333	39.999	-63.162914	0	
480	N480	48.391333	66.999	-63.162914	0	
481	N481	48.391333	-29.001	-63.162914	0	
482	N482	16.391333	-2.001	-60.162914	0	
483	N483	16.391333	39.999	-60.162914	0	
484	N484	16.391333	-2.001	-63.162914	0	
485	N485	16.391333	39.999	-63.162914	0	
486	N486	16.391333	66.999	-63.162914	0	
487	N487	16.391333	-29.001	-63.162914	0	
488	N488	-15.608667	-2.001	-60.162914	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
489	N489	-15.608667	39.999	-60.162914	0	
490	N490	-15.608667	-2.001	-63.162914	0	
491	N491	-15.608667	39.999	-63.162914	0	
492	N492	-15.608667	66.999	-63.162914	0	
493	N493	-15.608667	-29.001	-63.162914	0	
494	N494	-47.608667	-2.001	-60.162914	0	
495	N495	-47.608667	39.999	-60.162914	0	
496	N496	-47.608667	-2.001	-63.162914	0	
497	N497	-47.608667	39.999	-63.162914	0	
498	N498	-47.608667	66.999	-63.162914	0	
499	N499	-47.608667	-29.001	-63.162914	0	
500	N500	-60.162914	39.999	-54.391333	0	
501	N501	-60.162914	39.999	53.608667	0	
502	N502	-60.162914	-2.001	-48.391333	0	
503	N503	-60.162914	39.999	-48.391333	0	
504	N504	-63.162914	-2.001	-48.391333	0	
505	N505	-63.162914	39.999	-48.391333	0	
506	N506	-63.162914	66.999	-48.391333	0	
507	N507	-63.162914	-29.001	-48.391333	0	
508	N508	-60.162914	-2.001	-16.391333	0	
509	N509	-60.162914	39.999	-16.391333	0	
510	N510	-63.162914	-2.001	-16.391333	0	
511	N511	-63.162914	39.999	-16.391333	0	
512	N512	-63.162914	66.999	-16.391333	0	
513	N513	-63.162914	-29.001	-16.391333	0	
514	N514	-60.162914	-2.001	15.608667	0	
515	N515	-60.162914	39.999	15.608667	0	
516	N516	-63.162914	-2.001	15.608667	0	
517	N517	-63.162914	39.999	15.608667	0	
518	N518	-63.162914	66.999	15.608667	0	
519	N519	-63.162914	-29.001	15.608667	0	
520	N520	-60.162914	-2.001	47.608667	0	
521	N521	-60.162914	39.999	47.608667	0	
522	N522	-63.162914	-2.001	47.608667	0	
523	N523	-63.162914	39.999	47.608667	0	
524	N524	-63.162914	66.999	47.608667	0	
525	N525	-63.162914	-29.001	47.608667	0	
526	N526	17.715035	1.5	34.064274	0	
527	N527	-4.242641	-0.999547	4.242641	0	
528	N529	-4.242641	-0.249547	4.242641	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
529	N533	4.242641	-0.999547	4.242641	0	
530	N534	4.242641	-0.249547	4.242641	0	
531	N539	4.242641	-0.999547	-4.242641	0	
532	N540	4.242641	-0.249547	-4.242641	0	
533	N545	-4.242641	-0.999547	-4.242641	0	
534	N546	-4.242641	-0.249547	-4.242641	0	

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	R2A	max	-1179.989	9	135.966	19	9682.749	19	67.926	20	227.473	5	63.973	19
2		min	-9647.083	20	28.172	9	1234.126	9	4.212	9	-47.17	9	10.202	9
3	N194A	max	9729.977	22	139.234	22	9715.894	22	64.722	22	308.516	13	4.71	10
4		min	-199.611	11	15.687	11	-247.542	11	-5.352	11	-217.584	2	-66.508	22
5	N288	max	7610.267	16	116.317	16	629.356	14	2.191	14	222.982	14	11.837	14
6		min	-704.126	14	9.01	14	-7533.14	16	-48.254	16	-255.307	2	-52.093	16
7	N382	max	176.702	15	95.542	17	160.697	15	5.538	15	128.638	6	31.808	17
8		min	-5179.144	17	12.659	15	-5128.498	17	-30.995	17	-53.064	9	-1.13	15
9	N529	max	7975.83	6	3496.884	19	1282.625	9	87.918	20	994.122	13	92.584	21
10		min	-1226.664	9	576.282	9	-7510.967	21	-8.686	9	-339.055	2	-12.305	9
11	N534	max	3733.097	11	3561.159	22	3741.536	10	87.819	22	1294.123	7	35.791	10
12		min	-7347.03	22	226.657	11	-7675.482	22	-35.385	11	-944.709	9	-91.232	22
13	N540	max	3673.478	13	2832.128	16	5577.765	2	37.843	13	827.529	14	39.877	14
14		min	-5121.131	16	48.099	14	-4070.514	14	-70.523	16	-806.546	2	-57.568	16
15	N546	max	5221.281	4	2157.244	17	5131.704	4	22.12	15	522.693	7	55.96	4
16		min	-2470.703	15	176.774	15	-2390.859	15	-60.075	4	-388.351	9	-24.974	15
17	Totals:	max	8525.86	12	11782.661	16	7673.981	9						
18		min	-.02	8	3440.491	14	-7673.992	8						

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	R2A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N194A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N288	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N382	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N202						
6	N284						
7	N378						

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
8	N190A						
9	N529	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
10	N534	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
11	N540	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
12	N546	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M146	L3x3x6	34.973	Segment	Segment	Lbyy			.65	.65		Lateral
2	M147	L3x3x6	28.63	Segment	Segment	Lbyy			.65	.65		Lateral
3	M148	L3x3x6	28.63	Segment	Segment	Lbyy			.65	.65		Lateral
4	M149	HSS4X3X4	50.932			Lbyy			1	1		Lateral
5	M150	3/8x3	7.261			Lbyy			.65	.65		Lateral
6	M151	3/8x3	7.261			Lbyy			.65	.65		Lateral
7	M152A	.5 x 2 3/8 "	19.907	6	6	Lbyy			.65	.65		Lateral
8	M153A	.5 x 2 3/8 "	13.486	6	6	Lbyy			.65	.65		Lateral
9	M154A	.5 x 2 3/8 "	7	6	6	Lbyy			.65	.65		Lateral
10	M155A	.5 x 2 3/8 "	19.907	6	6	Lbyy			.65	.65		Lateral
11	M156	.5 x 2 3/8 "	13.486	6	6	Lbyy			.65	.65		Lateral
12	M157	.5 x 2 3/8 "	7	6	6	Lbyy			.65	.65		Lateral
13	M176	.5"x4"	12.278						.65	.65		Lateral
14	M177	.5"x4"	7.776	Segment	Segment				.65	.65		Lateral
15	M178	.5"x4"	8.619						.65	.65		Lateral
16	M179	3/8 x4	12.543						.65	.65		Lateral
17	M180	3/8 x4	7.998						.65	.65		Lateral
18	M181	3/8 x4	8.906						.65	.65		Lateral
19	M182	3/8 x 1"	12.278						.65	.65		Lateral
20	M183	3/8 x 1"	7.776						.65	.65		Lateral
21	M184	3/8 x 1"	8.619						.65	.65		Lateral
22	M185	3/8 x 1"	12.543						.65	.65		Lateral
23	M186	3/8 x 1"	7.998						.65	.65		Lateral
24	M187	3/8 x 1"	8.771						.65	.65		Lateral
25	M188	3/8 x 1"	10.449						.65	.65		Lateral
26	M190	3/8 x 1"	12.161						.65	.65		Lateral
27	M191	3/8 x 1"	8.633						.65	.65		Lateral
28	M192	3/8 x 1"	10.462						.65	.65		Lateral
29	M193	.875x.375	6.999						.65	.65		Lateral
30	M194	.875x.375	8.719						.65	.65		Lateral
31	M195	.875x.375	5.606						.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
32	M196	3/4x3/8	7.145						.65	.65		Lateral
33	M197	3/4x3/8	4.437						.65	.65		Lateral
34	M198	3/4x3/8	5.846						.65	.65		Lateral
35	M199	3/8 x 5/8	3.452						.65	.65		Lateral
36	M200	3/8 x 5/8	4.766						.65	.65		Lateral
37	M203	3/8 x4	11.5						.65	.65		Lateral
38	M204	3/8 x4	11						.65	.65		Lateral
39	M205	3/8 x 1"	11.484						.65	.65		Lateral
40	M206	3/8 x 1"	11						.65	.65		Lateral
41	M207	3/8 x 1"	11.5						.65	.65		Lateral
42	M209	3/8 x 1"	15.526						.65	.65		Lateral
43	M210	3/8 x 1"	10.449						.65	.65		Lateral
44	M213	.5"x4"	11.5						.65	.65		Lateral
45	M219	3/8 x4	8.974						.65	.65		Lateral
46	M220	.5"x4"	9.128						.65	.65		Lateral
47	M221	3/8 x 1"	9.128						.65	.65		Lateral
48	M222	3/8 x 1"	9.103						.65	.65		Lateral
49	M223	.5"x4"	8.699						.65	.65		Lateral
50	M224	3/8 x 1"	8.699						.65	.65		Lateral
51	M225	3/8 x 1"	8.886						.65	.65		Lateral
52	M226	3/8 x4	8.886						.65	.65		Lateral
53	M230	L3x3x6	34.973	Segment	Segment	Lbyy			.65	.65		Lateral
54	M231	PIPE_2.5	108			Lbyy			.65	.65		Lateral
55	M135A	L3x3x6	34.973	Segment	Segment	Lbyy			.65	.65		Lateral
56	M136A	L3x3x6	28.63	Segment	Segment	Lbyy			.65	.65		Lateral
57	M137A	L3x3x6	28.63	Segment	Segment	Lbyy			.65	.65		Lateral
58	M138	HSS4X3X4	50.932			Lbyy			1	1		Lateral
59	M214	L3x3x6	34.973	Segment	Segment	Lbyy			.65	.65		Lateral
60	M240	L3x3x6	34.973	Segment	Segment	Lbyy			.65	.65		Lateral
61	M241	L3x3x6	28.63	Segment	Segment	Lbyy			.65	.65		Lateral
62	M242	L3x3x6	28.63	Segment	Segment	Lbyy			.65	.65		Lateral
63	M243	HSS4X3X4	50.932			Lbyy			1	1		Lateral
64	M319	L3x3x6	34.973	Segment	Segment	Lbyy			.65	.65		Lateral
65	M345	L3x3x6	34.973	Segment	Segment	Lbyy			.65	.65		Lateral
66	M346	L3x3x6	28.63	Segment	Segment	Lbyy			.65	.65		Lateral
67	M347	L3x3x6	28.63	Segment	Segment	Lbyy			.65	.65		Lateral
68	M348	HSS4X3X4	50.932			Lbyy			1	1		Lateral
69	M424	L3x3x6	34.973	Segment	Segment	Lbyy			.65	.65		Lateral
70	M426A	PIPE_2.5	108			Lbyy			.65	.65		Lateral
71	M431	PIPE_2.5	108			Lbyy			.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
72	M436	PIPE_2.5	108			Lbyy			.65	.65		Lateral
73	M297	3/8x3	7.261			Lbyy			.65	.65		Lateral
74	M298	3/8x3	7.261			Lbyy			.65	.65		Lateral
75	M299	.5 x 2 3/8 "	19.907	6	6	Lbyy			.65	.65		Lateral
76	M300	.5 x 2 3/8 "	13.486	6	6	Lbyy			.65	.65		Lateral
77	M301	.5 x 2 3/8 "	7	6	6	Lbyy			.65	.65		Lateral
78	M302	.5 x 2 3/8 "	19.907	6	6	Lbyy			.65	.65		Lateral
79	M303	.5 x 2 3/8 "	13.486	6	6	Lbyy			.65	.65		Lateral
80	M304	.5 x 2 3/8 "	7	6	6	Lbyy			.65	.65		Lateral
81	M305A	.5"x4"	12.278						.65	.65		Lateral
82	M306A	.5"x4"	7.776	Segment	Segment				.65	.65		Lateral
83	M307A	.5"x4"	8.619						.65	.65		Lateral
84	M308	3/8 x4	12.543						.65	.65		Lateral
85	M309	3/8 x4	7.998						.65	.65		Lateral
86	M310	3/8 x4	8.906						.65	.65		Lateral
87	M311	3/8 x 1"	12.278						.65	.65		Lateral
88	M312	3/8 x 1"	7.776						.65	.65		Lateral
89	M313	3/8 x 1"	8.619						.65	.65		Lateral
90	M314	3/8 x 1"	12.543						.65	.65		Lateral
91	M315	3/8 x 1"	7.998						.65	.65		Lateral
92	M316A	3/8 x 1"	8.771						.65	.65		Lateral
93	M317A	3/8 x 1"	10.449						.65	.65		Lateral
94	M318A	3/8 x 1"	12.161						.65	.65		Lateral
95	M319A	3/8 x 1"	8.633						.65	.65		Lateral
96	M320A	3/8 x 1"	10.462						.65	.65		Lateral
97	M321A	.875x.375	6.999						.65	.65		Lateral
98	M322A	.875x.375	8.719						.65	.65		Lateral
99	M323A	.875x.375	5.606						.65	.65		Lateral
100	M324A	3/4x3/8	7.145						.65	.65		Lateral
101	M325A	3/4x3/8	4.437						.65	.65		Lateral
102	M326A	3/4x3/8	5.846						.65	.65		Lateral
103	M327A	3/8 x 5/8	3.452						.65	.65		Lateral
104	M328A	3/8 x 5/8	4.766						.65	.65		Lateral
105	M329A	3/8 x4	11.5						.65	.65		Lateral
106	M330A	3/8 x4	11						.65	.65		Lateral
107	M331A	3/8 x 1"	11.484						.65	.65		Lateral
108	M332A	3/8 x 1"	11						.65	.65		Lateral
109	M333A	3/8 x 1"	11.5						.65	.65		Lateral
110	M334A	3/8 x 1"	15.526						.65	.65		Lateral
111	M335A	3/8 x 1"	10.449						.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
112	M336A	.5"x4"	11.5						.65	.65		Lateral
113	M337A	3/8 x4	8.974						.65	.65		Lateral
114	M338A	.5"x4"	9.128						.65	.65		Lateral
115	M339A	3/8 x 1"	9.128						.65	.65		Lateral
116	M340A	3/8 x 1"	9.103						.65	.65		Lateral
117	M341A	.5"x4"	8.699						.65	.65		Lateral
118	M342A	3/8 x 1"	8.699						.65	.65		Lateral
119	M343A	3/8 x 1"	8.886						.65	.65		Lateral
120	M344	3/8 x4	8.886						.65	.65		Lateral
121	M345A	3/8x3	7.261			Lbyy			.65	.65		Lateral
122	M346A	3/8x3	7.261			Lbyy			.65	.65		Lateral
123	M347A	.5 x 2 3/8 "	19.907	6	6	Lbyy			.65	.65		Lateral
124	M348A	.5 x 2 3/8 "	13.486	6	6	Lbyy			.65	.65		Lateral
125	M349	.5 x 2 3/8 "	7	6	6	Lbyy			.65	.65		Lateral
126	M350	.5 x 2 3/8 "	19.907	6	6	Lbyy			.65	.65		Lateral
127	M351	.5 x 2 3/8 "	13.486	6	6	Lbyy			.65	.65		Lateral
128	M352	.5 x 2 3/8 "	7	6	6	Lbyy			.65	.65		Lateral
129	M353	.5"x4"	12.278						.65	.65		Lateral
130	M354	.5"x4"	7.776	Segment	Segment				.65	.65		Lateral
131	M355	.5"x4"	8.619						.65	.65		Lateral
132	M356	3/8 x4	12.543						.65	.65		Lateral
133	M357A	3/8 x4	7.998						.65	.65		Lateral
134	M358A	3/8 x4	8.906						.65	.65		Lateral
135	M359A	3/8 x 1"	12.278						.65	.65		Lateral
136	M360A	3/8 x 1"	7.776						.65	.65		Lateral
137	M361A	3/8 x 1"	8.619						.65	.65		Lateral
138	M362A	3/8 x 1"	12.543						.65	.65		Lateral
139	M363A	3/8 x 1"	7.998						.65	.65		Lateral
140	M364A	3/8 x 1"	8.771						.65	.65		Lateral
141	M365A	3/8 x 1"	10.449						.65	.65		Lateral
142	M366A	3/8 x 1"	12.161						.65	.65		Lateral
143	M367A	3/8 x 1"	8.633						.65	.65		Lateral
144	M368A	3/8 x 1"	10.462						.65	.65		Lateral
145	M369A	.875x.375	6.999						.65	.65		Lateral
146	M370A	.875x.375	8.719						.65	.65		Lateral
147	M371A	.875x.375	5.606						.65	.65		Lateral
148	M372A	3/4x3/8	7.145						.65	.65		Lateral
149	M373A	3/4x3/8	4.437						.65	.65		Lateral
150	M374A	3/4x3/8	5.846						.65	.65		Lateral
151	M375	3/8 x 5/8	3.452						.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
152	M376	3/8 x 5/8	4.766						.65	.65		Lateral
153	M377	3/8 x4	11.5						.65	.65		Lateral
154	M378	3/8 x4	11						.65	.65		Lateral
155	M379	3/8 x 1"	11.484						.65	.65		Lateral
156	M380	3/8 x 1"	11						.65	.65		Lateral
157	M381	3/8 x 1"	11.5						.65	.65		Lateral
158	M382	3/8 x 1"	15.526						.65	.65		Lateral
159	M383	3/8 x 1"	10.449						.65	.65		Lateral
160	M384	.5"x4"	11.5						.65	.65		Lateral
161	M385	3/8 x4	8.974						.65	.65		Lateral
162	M386	.5"x4"	9.128						.65	.65		Lateral
163	M387	3/8 x 1"	9.128						.65	.65		Lateral
164	M388A	3/8 x 1"	9.103						.65	.65		Lateral
165	M389	.5"x4"	8.699						.65	.65		Lateral
166	M390	3/8 x 1"	8.699						.65	.65		Lateral
167	M391	3/8 x 1"	8.886						.65	.65		Lateral
168	M392	3/8 x4	8.886						.65	.65		Lateral
169	M393	3/8x3	7.261			Lbyy			.65	.65		Lateral
170	M394	3/8x3	7.261			Lbyy			.65	.65		Lateral
171	M395	.5 x 2 3/8 "	19.907	6	6	Lbyy			.65	.65		Lateral
172	M396	.5 x 2 3/8 "	13.486	6	6	Lbyy			.65	.65		Lateral
173	M397	.5 x 2 3/8 "	7	6	6	Lbyy			.65	.65		Lateral
174	M398	.5 x 2 3/8 "	19.907	6	6	Lbyy			.65	.65		Lateral
175	M399	.5 x 2 3/8 "	13.486	6	6	Lbyy			.65	.65		Lateral
176	M400A	.5 x 2 3/8 "	7	6	6	Lbyy			.65	.65		Lateral
177	M401A	.5"x4"	12.278						.65	.65		Lateral
178	M402	.5"x4"	7.776	Segment	Segment				.65	.65		Lateral
179	M403	.5"x4"	8.619						.65	.65		Lateral
180	M404	3/8 x4	12.543						.65	.65		Lateral
181	M405	3/8 x4	7.998						.65	.65		Lateral
182	M406	3/8 x4	8.906						.65	.65		Lateral
183	M407	3/8 x 1"	12.278						.65	.65		Lateral
184	M408	3/8 x 1"	7.776						.65	.65		Lateral
185	M409	3/8 x 1"	8.619						.65	.65		Lateral
186	M410A	3/8 x 1"	12.543						.65	.65		Lateral
187	M411A	3/8 x 1"	7.998						.65	.65		Lateral
188	M412A	3/8 x 1"	8.771						.65	.65		Lateral
189	M413	3/8 x 1"	10.449						.65	.65		Lateral
190	M414	3/8 x 1"	12.161						.65	.65		Lateral
191	M415	3/8 x 1"	8.633						.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
192	M416	3/8 x 1"	10.462						.65	.65		Lateral
193	M417	.875x.375	6.999						.65	.65		Lateral
194	M418	.875x.375	8.719						.65	.65		Lateral
195	M419	.875x.375	5.606						.65	.65		Lateral
196	M420	3/4x3/8	7.145						.65	.65		Lateral
197	M421A	3/4x3/8	4.437						.65	.65		Lateral
198	M422B	3/4x3/8	5.846						.65	.65		Lateral
199	M423B	3/8 x 5/8	3.452						.65	.65		Lateral
200	M424B	3/8 x 5/8	4.766						.65	.65		Lateral
201	M425B	3/8 x4	11.5						.65	.65		Lateral
202	M426B	3/8 x4	11						.65	.65		Lateral
203	M427A	3/8 x 1"	11.484						.65	.65		Lateral
204	M428A	3/8 x 1"	11						.65	.65		Lateral
205	M429A	3/8 x 1"	11.5						.65	.65		Lateral
206	M430A	3/8 x 1"	15.526						.65	.65		Lateral
207	M431A	3/8 x 1"	10.449						.65	.65		Lateral
208	M432A	.5"x4"	11.5						.65	.65		Lateral
209	M433A	3/8 x4	8.974						.65	.65		Lateral
210	M434A	.5"x4"	9.128						.65	.65		Lateral
211	M435A	3/8 x 1"	9.128						.65	.65		Lateral
212	M436A	3/8 x 1"	9.103						.65	.65		Lateral
213	M437A	.5"x4"	8.699						.65	.65		Lateral
214	M438A	3/8 x 1"	8.699						.65	.65		Lateral
215	M439A	3/8 x 1"	8.886						.65	.65		Lateral
216	M440A	3/8 x4	8.886						.65	.65		Lateral
217	M441	Pipe_1.5	34.219			Lbyy						Lateral
218	M442	Pipe_1.5	34.223			Lbyy						Lateral
219	M443	3/16 x1 1/2	20.245			Lbyy						Lateral
220	M444	3/16 x1 1/2	20.245			Lbyy						Lateral
221	M445	3/16 x1 1/2	20.245			Lbyy						Lateral
222	M446	Pipe_1.5	34.219			Lbyy						Lateral
223	M447	Pipe_1.5	34.223			Lbyy						Lateral
224	M448	3/16 x1 1/2	20.245			Lbyy						Lateral
225	M449	3/16 x1 1/2	20.245			Lbyy						Lateral
226	M450	3/16 x1 1/2	20.245			Lbyy						Lateral
227	M451	Pipe_1.5	34.219			Lbyy						Lateral
228	M452	Pipe_1.5	34.223			Lbyy						Lateral
229	M453	3/16 x1 1/2	20.245			Lbyy						Lateral
230	M454	3/16 x1 1/2	20.245			Lbyy						Lateral
231	M455	3/16 x1 1/2	20.245			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
232	M456	Pipe_1.5	34.219			Lbyy						Lateral
233	M457	Pipe_1.5	34.223			Lbyy						Lateral
234	M458	3/16 x1 1/2	20.245			Lbyy						Lateral
235	M459	3/16 x1 1/2	20.245			Lbyy						Lateral
236	M460	3/16 x1 1/2	20.245			Lbyy						Lateral
237	M461	Pipe_2.0	108			Lbyy						Lateral
238	M464	Pipe_2.0	96			Lbyy						Lateral
239	MP3	Pipe_2.0	96			Lbyy						Lateral
240	MP2	Pipe_2.0	96			Lbyy						Lateral
241	MP1	Pipe_2.0	96			Lbyy						Lateral
242	M474	Pipe_2.0	108			Lbyy						Lateral
243	M477	Pipe_2.0	96			Lbyy						Lateral
244	MP12	Pipe_2.0	96			Lbyy						Lateral
245	MP11	Pipe_2.0	96			Lbyy						Lateral
246	MP10	Pipe_2.0	96			Lbyy						Lateral
247	M487	Pipe_2.0	108			Lbyy						Lateral
248	M490	Pipe_2.0	96			Lbyy						Lateral
249	MP9	Pipe_2.0	96			Lbyy						Lateral
250	MP8	Pipe_2.0	96			Lbyy						Lateral
251	MP7	Pipe_2.0	96			Lbyy						Lateral
252	M500	Pipe_2.0	108			Lbyy						Lateral
253	M503	Pipe_2.0	96			Lbyy						Lateral
254	MP6	Pipe_2.0	96			Lbyy						Lateral
255	MP5	Pipe_2.0	96			Lbyy						Lateral
256	MP4	Pipe_2.0	96			Lbyy						Lateral
257	M517	3/8 x 1"	15.171						.65	.65		Lateral
258	M518	3/8 x 1"	10.449						.65	.65		Lateral
259	M520	3/8 x 1"	11						.65	.65		Lateral
260	M521	.5"x4"	11						.65	.65		Lateral
261	M522	3/8 x 1"	15.171						.65	.65		Lateral
262	M523	3/8 x 1"	10.449						.65	.65		Lateral
263	M525	3/8 x 1"	11						.65	.65		Lateral
264	M526	.5"x4"	11						.65	.65		Lateral
265	M527	3/8 x 1"	15.171						.65	.65		Lateral
266	M528	3/8 x 1"	10.449						.65	.65		Lateral
267	M530	3/8 x 1"	11						.65	.65		Lateral
268	M531	.5"x4"	11						.65	.65		Lateral
269	M532	3/8 x 1"	15.171						.65	.65		Lateral
270	M533	3/8 x 1"	10.449						.65	.65		Lateral
271	M535	3/8 x 1"	11						.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
272	M536	.5"x4"	11						.65	.65		Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
1	M121	N120	N126			RIGID	None	None	RIGID	Typical
2	M122	N122	N127			RIGID	None	None	RIGID	Typical
3	M123	N123	N128			RIGID	None	None	RIGID	Typical
4	M124	N121	N129			RIGID	None	None	RIGID	Typical
5	M125	N124	N130			RIGID	None	None	RIGID	Typical
6	M126	N125	N131			RIGID	None	None	RIGID	Typical
7	M127	N132	N134			RIGID	None	None	RIGID	Typical
8	M128	N133	N136			RIGID	None	None	RIGID	Typical
9	M129	N120	N140A			RIGID	None	None	RIGID	Typical
10	M130	N122	N141			RIGID	None	None	RIGID	Typical
11	M131	N123	N142			RIGID	None	None	RIGID	Typical
12	M132	N137	N143			RIGID	None	None	RIGID	Typical
13	M133	N138	N144			RIGID	None	None	RIGID	Typical
14	M134	N139A	N145			RIGID	None	None	RIGID	Typical
15	M135	N132	N146			RIGID	None	None	RIGID	Typical
16	M136	N133	N148			RIGID	None	None	RIGID	Typical
17	M137	N149	N150			RIGID	None	None	RIGID	Typical
18	M138A	N150	N151			RIGID	None	None	RIGID	Typical
19	M139	N155	N156			RIGID	None	None	RIGID	Typical
20	M140	N156	N152			RIGID	None	None	RIGID	Typical
21	M141	N157	N158			RIGID	None	None	RIGID	Typical
22	M143	N161	N162			RIGID	None	None	RIGID	Typical
23	M144	N162	N160			RIGID	None	None	RIGID	Typical
24	M146	N146	N147		90	L3x3x6	Beam	Single Angle	Q235	Typical
25	M147	N148	N153		180	L3x3x6	Beam	Single Angle	Q235	Typical
26	M148	N136	N154		90	L3x3x6	Beam	Single Angle	Q235	Typical
27	M149	N117	N118		90	HSS4X3X4	Beam	Tube	Q235	Typical
28	M150	N147	N153			3/8x3	Beam	RECT	Q235	Typical
29	M151	N135	N154			3/8x3	Beam	RECT	Q235	Typical
30	M152A	N127	N124			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
31	M153A	N128	N125			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
32	M154A	N126	N121			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
33	M155A	N141	N138			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
34	M156	N142	N139A			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
35	M157	N140A	N137			.5 x 2 3/8 "	Beam	RECT	Q235	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
36	M158	N170	N165			RIGID	None	None	RIGID	Typical
37	M159	N177	N171			RIGID	None	None	RIGID	Typical
38	M160	N178	N172			RIGID	None	None	RIGID	Typical
39	M161	N179	N173			RIGID	None	None	RIGID	Typical
40	M162	N180	N174			RIGID	None	None	RIGID	Typical
41	M163	N181	N167			RIGID	None	None	RIGID	Typical
42	M164	N182	N175			RIGID	None	None	RIGID	Typical
43	M165	N183	N176			RIGID	None	None	RIGID	Typical
44	M166	N199	N168			RIGID	None	None	RIGID	Typical
45	M167	N201	N200			RIGID	None	None	RIGID	Typical
46	M168	N192	N198			RIGID	None	None	RIGID	Typical
47	M169	N191	N197			RIGID	None	None	RIGID	Typical
48	M170	N190	N196			RIGID	None	None	RIGID	Typical
49	M171	N189	N195			RIGID	None	None	RIGID	Typical
50	M172	N187	N194			RIGID	None	None	RIGID	Typical
51	M173	N188	N185			RIGID	None	None	RIGID	Typical
52	M174	N186	N193			RIGID	None	None	RIGID	Typical
53	M175	N169	N184			RIGID	None	None	RIGID	Typical
54	M176	N174	N172		90	.5"x4"	Beam	RECT	Q235	Typical
55	M177	N172	N171		90	.5"x4"	Beam	RECT	Q235	Typical
56	M178	N171	N165		90	.5"x4"	Beam	RECT	Q235	Typical
57	M179	N189	N188		90	3/8 x4	Beam	RECT	Q235	Typical
58	M180	N188	N186		90	3/8 x4	Beam	RECT	Q235	Typical
59	M181	N186	N169		90	3/8 x4	Beam	RECT	Q235	Typical
60	M182	N180	N178			3/8 x 1"	Beam	RECT	Q235	Typical
61	M183	N178	N177			3/8 x 1"	Beam	RECT	Q235	Typical
62	M184	N177	N170			3/8 x 1"	Beam	RECT	Q235	Typical
63	M185	N195	N185			3/8 x 1"	Beam	RECT	Q235	Typical
64	M186	N185	N193			3/8 x 1"	Beam	RECT	Q235	Typical
65	M187	N193	N184			3/8 x 1"	Beam	RECT	Q235	Typical
66	M188	N184	N170			3/8 x 1"	Beam	RECT	Q235	Typical
67	M189	N200	N199			RIGID	None	None	RIGID	Typical
68	M190	N170	N193			3/8 x 1"	Beam	RECT	Q235	Typical
69	M191	N193	N177			3/8 x 1"	Beam	RECT	Q235	Typical
70	M192	N177	N185			3/8 x 1"	Beam	RECT	Q235	Typical
71	M193	N185	N178		45	.875x.375	Beam	RECT	Q235	Typical
72	M194	N194	N178			.875x.375	Beam	RECT	Q235	Typical
73	M195	N194	N179		45	.875x.375	Beam	RECT	Q235	Typical
74	M196	N195	N179			3/4x3/8	Beam	RECT	Q235	Typical
75	M197	N195	N180		45	3/4x3/8	Beam	RECT	Q235	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
76	M198	N196	N180			3/4x3/8	Beam	RECT	Q235	Typical
77	M199	N196	N181		45	3/8 x 5/8	Beam	RECT	Q235	Typical
78	M200	N197	N181			3/8 x 5/8	Beam	RECT	Q235	Typical
79	M201	N197	N182			RIGID	None	None	RIGID	Typical
80	M202	N198	N183			RIGID	None	None	RIGID	Typical
81	M203	N169	N203		90	3/8 x4	Beam	RECT	Q235	Typical
82	M204	N203	R2A		90	3/8 x4	Beam	RECT	Q235	Typical
83	M205	N184	N205			3/8 x 1"	Beam	RECT	Q235	Typical
84	M206	N205	N209A			3/8 x 1"	Beam	RECT	Q235	Typical
85	M207	N170	N204			3/8 x 1"	Beam	RECT	Q235	Typical
86	M209	N184	N204			3/8 x 1"	Beam	RECT	Q235	Typical
87	M210	N205	N204		45	3/8 x 1"	Beam	RECT	Q235	Typical
88	M213	N165	N202		90	.5"x4"	Beam	RECT	Q235	Typical
89	M215	N204	N202			RIGID	None	None	RIGID	Typical
90	M217	R2A	N209A			RIGID	None	None	RIGID	Typical
91	M218	N203	N205			RIGID	None	None	RIGID	Typical
92	M219	N201	N191		90	3/8 x4	Beam	RECT	Q235	Typical
93	M220	N168	N175		90	.5"x4"	Beam	RECT	Q235	Typical
94	M221	N199	N182			3/8 x 1"	Beam	RECT	Q235	Typical
95	M222	N200	N197			3/8 x 1"	Beam	RECT	Q235	Typical
96	M223	N175	N174		90	.5"x4"	Beam	RECT	Q235	Typical
97	M224	N182	N180			3/8 x 1"	Beam	RECT	Q235	Typical
98	M225	N197	N195			3/8 x 1"	Beam	RECT	Q235	Typical
99	M226	N191	N189		90	3/8 x4	Beam	RECT	Q235	Typical
100	M227	N210A	N163			RIGID	None	None	RIGID	Typical
101	M228	N164	N132			RIGID	None	None	RIGID	Typical
102	M229	N158	N159			RIGID	None	None	RIGID	Typical
103	M230	N134	N135		180	L3x3x6	Beam	Single Angle	Q235	Typical
104	M231	N386A	N387			PIPE_2.5	Beam	Pipe	Q235	Typical
105	M453A	N182	N198			RIGID	None	None	RIGID	Typical
106	M454A	N183	N211A			RIGID	None	None	RIGID	Typical
107	M112	N109	N115			RIGID	None	None	RIGID	Typical
108	M113	N111	N116			RIGID	None	None	RIGID	Typical
109	M114	N112	N117A			RIGID	None	None	RIGID	Typical
110	M115	N110	N118A			RIGID	None	None	RIGID	Typical
111	M116	N113	N119A			RIGID	None	None	RIGID	Typical
112	M117	N114	N120A			RIGID	None	None	RIGID	Typical
113	M118	N121A	N123A			RIGID	None	None	RIGID	Typical
114	M119	N122A	N125A			RIGID	None	None	RIGID	Typical
115	M120	N109	N129A			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
116	M121A	N111	N130A			RIGID	None	None	RIGID	Typical
117	M122A	N112	N131A			RIGID	None	None	RIGID	Typical
118	M123A	N126A	N132A			RIGID	None	None	RIGID	Typical
119	M124A	N127A	N133A			RIGID	None	None	RIGID	Typical
120	M125A	N128A	N134A			RIGID	None	None	RIGID	Typical
121	M126A	N121A	N135A			RIGID	None	None	RIGID	Typical
122	M127A	N122A	N137A			RIGID	None	None	RIGID	Typical
123	M128A	N138A	N139			RIGID	None	None	RIGID	Typical
124	M129A	N139	N140			RIGID	None	None	RIGID	Typical
125	M130A	N144A	N145A			RIGID	None	None	RIGID	Typical
126	M131A	N145A	N141A			RIGID	None	None	RIGID	Typical
127	M132A	N146A	N147A			RIGID	None	None	RIGID	Typical
128	M133A	N150A	N151A			RIGID	None	None	RIGID	Typical
129	M134A	N151A	N149A			RIGID	None	None	RIGID	Typical
130	M135A	N135A	N136A		90	L3x3x6	Beam	Single Angle	Q235	Typical
131	M136A	N137A	N142A		180	L3x3x6	Beam	Single Angle	Q235	Typical
132	M137A	N125A	N143A		90	L3x3x6	Beam	Single Angle	Q235	Typical
133	M138	N106	N107		90	HSS4X3X4	Beam	Tube	Q235	Typical
134	M147A	N158A	N154A			RIGID	None	None	RIGID	Typical
135	M148A	N165A	N159A			RIGID	None	None	RIGID	Typical
136	M149A	N166	N160A			RIGID	None	None	RIGID	Typical
137	M150A	N167A	N161A			RIGID	None	None	RIGID	Typical
138	M151A	N168A	N162A			RIGID	None	None	RIGID	Typical
139	M152	N169A	N155A			RIGID	None	None	RIGID	Typical
140	M153	N170A	N163A			RIGID	None	None	RIGID	Typical
141	M154	N171A	N164A			RIGID	None	None	RIGID	Typical
142	M155	N187A	N156A			RIGID	None	None	RIGID	Typical
143	M156A	N189A	N188A			RIGID	None	None	RIGID	Typical
144	M157A	N180A	N186A			RIGID	None	None	RIGID	Typical
145	M158A	N179A	N185A			RIGID	None	None	RIGID	Typical
146	M159A	N178A	N184A			RIGID	None	None	RIGID	Typical
147	M160A	N177A	N183A			RIGID	None	None	RIGID	Typical
148	M161A	N175A	N182A			RIGID	None	None	RIGID	Typical
149	M162A	N176A	N173A			RIGID	None	None	RIGID	Typical
150	M163A	N174A	N181A			RIGID	None	None	RIGID	Typical
151	M164A	N157A	N172A			RIGID	None	None	RIGID	Typical
152	M178A	N188A	N187A			RIGID	None	None	RIGID	Typical
153	M190A	N185A	N170A			RIGID	None	None	RIGID	Typical
154	M191A	N186A	N171A			RIGID	None	None	RIGID	Typical
155	M200A	N192A	N190A			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
156	M201A	N194A	N195A			RIGID	None	None	RIGID	Typical
157	M202A	N191A	N193A			RIGID	None	None	RIGID	Typical
158	M211	N196A	N152A			RIGID	None	None	RIGID	Typical
159	M212	N153A	N121A			RIGID	None	None	RIGID	Typical
160	M213A	N147A	N148A			RIGID	None	None	RIGID	Typical
161	M214	N123A	N124A		180	L3x3x6	Beam	Single Angle	Q235	Typical
162	M215A	N170A	N186A			RIGID	None	None	RIGID	Typical
163	M216	N171A	N197A			RIGID	None	None	RIGID	Typical
164	M217A	N203A	N209			RIGID	None	None	RIGID	Typical
165	M218A	N205A	N210			RIGID	None	None	RIGID	Typical
166	M219A	N206	N211			RIGID	None	None	RIGID	Typical
167	M220A	N204A	N212			RIGID	None	None	RIGID	Typical
168	M221A	N207	N213			RIGID	None	None	RIGID	Typical
169	M222A	N208	N214			RIGID	None	None	RIGID	Typical
170	M223A	N215	N217			RIGID	None	None	RIGID	Typical
171	M224A	N216	N219			RIGID	None	None	RIGID	Typical
172	M225A	N203A	N223			RIGID	None	None	RIGID	Typical
173	M226A	N205A	N224			RIGID	None	None	RIGID	Typical
174	M227A	N206	N225			RIGID	None	None	RIGID	Typical
175	M228A	N220	N226			RIGID	None	None	RIGID	Typical
176	M229A	N221	N227			RIGID	None	None	RIGID	Typical
177	M230A	N222	N228			RIGID	None	None	RIGID	Typical
178	M231A	N215	N229			RIGID	None	None	RIGID	Typical
179	M232	N216	N231			RIGID	None	None	RIGID	Typical
180	M233A	N232	N233			RIGID	None	None	RIGID	Typical
181	M234A	N233	N234			RIGID	None	None	RIGID	Typical
182	M235	N238	N239			RIGID	None	None	RIGID	Typical
183	M236	N239	N235			RIGID	None	None	RIGID	Typical
184	M237	N240	N241			RIGID	None	None	RIGID	Typical
185	M238	N244	N245			RIGID	None	None	RIGID	Typical
186	M239	N245	N243			RIGID	None	None	RIGID	Typical
187	M240	N229	N230		90	L3x3x6	Beam	Single Angle	Q235	Typical
188	M241	N231	N236		180	L3x3x6	Beam	Single Angle	Q235	Typical
189	M242	N219	N237		90	L3x3x6	Beam	Single Angle	Q235	Typical
190	M243	N200A	N201A		90	HSS4X3X4	Beam	Tube	Q235	Typical
191	M252	N252	N248			RIGID	None	None	RIGID	Typical
192	M253	N259	N253			RIGID	None	None	RIGID	Typical
193	M254	N260	N254			RIGID	None	None	RIGID	Typical
194	M255	N261A	N255			RIGID	None	None	RIGID	Typical
195	M256	N262A	N256			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
196	M257	N263	N249			RIGID	None	None	RIGID	Typical
197	M258	N264	N257			RIGID	None	None	RIGID	Typical
198	M259	N265	N258			RIGID	None	None	RIGID	Typical
199	M260	N281	N250			RIGID	None	None	RIGID	Typical
200	M261	N283	N282			RIGID	None	None	RIGID	Typical
201	M262	N274	N280			RIGID	None	None	RIGID	Typical
202	M263	N273	N279			RIGID	None	None	RIGID	Typical
203	M264	N272	N278			RIGID	None	None	RIGID	Typical
204	M265	N271	N277			RIGID	None	None	RIGID	Typical
205	M266	N269	N276			RIGID	None	None	RIGID	Typical
206	M267	N270	N267			RIGID	None	None	RIGID	Typical
207	M268	N268	N275			RIGID	None	None	RIGID	Typical
208	M269	N251	N266			RIGID	None	None	RIGID	Typical
209	M283	N282	N281			RIGID	None	None	RIGID	Typical
210	M295	N279	N264			RIGID	None	None	RIGID	Typical
211	M296	N280	N265			RIGID	None	None	RIGID	Typical
212	M305	N286	N284			RIGID	None	None	RIGID	Typical
213	M306	N288	N289			RIGID	None	None	RIGID	Typical
214	M307	N285	N287			RIGID	None	None	RIGID	Typical
215	M316	N290	N246			RIGID	None	None	RIGID	Typical
216	M317	N247	N215			RIGID	None	None	RIGID	Typical
217	M318	N241	N242			RIGID	None	None	RIGID	Typical
218	M319	N217	N218		180	L3x3x6	Beam	Single Angle	Q235	Typical
219	M320	N264	N280			RIGID	None	None	RIGID	Typical
220	M321	N265	N291			RIGID	None	None	RIGID	Typical
221	M322	N297	N303			RIGID	None	None	RIGID	Typical
222	M323	N299	N304			RIGID	None	None	RIGID	Typical
223	M324	N300	N305			RIGID	None	None	RIGID	Typical
224	M325	N298	N306			RIGID	None	None	RIGID	Typical
225	M326	N301	N307			RIGID	None	None	RIGID	Typical
226	M327	N302	N308			RIGID	None	None	RIGID	Typical
227	M328	N309	N311			RIGID	None	None	RIGID	Typical
228	M329	N310	N313			RIGID	None	None	RIGID	Typical
229	M330	N297	N317			RIGID	None	None	RIGID	Typical
230	M331	N299	N318			RIGID	None	None	RIGID	Typical
231	M332	N300	N319			RIGID	None	None	RIGID	Typical
232	M333	N314	N320			RIGID	None	None	RIGID	Typical
233	M334	N315	N321			RIGID	None	None	RIGID	Typical
234	M335	N316	N322			RIGID	None	None	RIGID	Typical
235	M336	N309	N323			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
236	M337	N310	N325			RIGID	None	None	RIGID	Typical
237	M338	N326	N327			RIGID	None	None	RIGID	Typical
238	M339	N327	N328			RIGID	None	None	RIGID	Typical
239	M340	N332	N333			RIGID	None	None	RIGID	Typical
240	M341	N333	N329			RIGID	None	None	RIGID	Typical
241	M342	N334	N335			RIGID	None	None	RIGID	Typical
242	M343	N338	N339			RIGID	None	None	RIGID	Typical
243	M344A	N339	N337			RIGID	None	None	RIGID	Typical
244	M345	N323	N324		90	L3x3x6	Beam	Single Angle	Q235	Typical
245	M346	N325	N330		180	L3x3x6	Beam	Single Angle	Q235	Typical
246	M347	N313	N331		90	L3x3x6	Beam	Single Angle	Q235	Typical
247	M348	N294	N295		90	HSS4X3X4	Beam	Tube	Q235	Typical
248	M357	N346	N342			RIGID	None	None	RIGID	Typical
249	M358	N353	N347			RIGID	None	None	RIGID	Typical
250	M359	N354	N348			RIGID	None	None	RIGID	Typical
251	M360	N355	N349			RIGID	None	None	RIGID	Typical
252	M361	N356	N350			RIGID	None	None	RIGID	Typical
253	M362	N357	N343			RIGID	None	None	RIGID	Typical
254	M363	N358	N351			RIGID	None	None	RIGID	Typical
255	M364	N359	N352			RIGID	None	None	RIGID	Typical
256	M365	N375	N344			RIGID	None	None	RIGID	Typical
257	M366	N377	N376			RIGID	None	None	RIGID	Typical
258	M367	N368	N374			RIGID	None	None	RIGID	Typical
259	M368	N367	N373			RIGID	None	None	RIGID	Typical
260	M369	N366	N372			RIGID	None	None	RIGID	Typical
261	M370	N365	N371			RIGID	None	None	RIGID	Typical
262	M371	N363	N370			RIGID	None	None	RIGID	Typical
263	M372	N364	N361			RIGID	None	None	RIGID	Typical
264	M373	N362	N369			RIGID	None	None	RIGID	Typical
265	M374	N345	N360			RIGID	None	None	RIGID	Typical
266	M388	N376	N375			RIGID	None	None	RIGID	Typical
267	M400	N373	N358			RIGID	None	None	RIGID	Typical
268	M401	N374	N359			RIGID	None	None	RIGID	Typical
269	M410	N380	N378			RIGID	None	None	RIGID	Typical
270	M411	N382	N383			RIGID	None	None	RIGID	Typical
271	M412	N379	N381			RIGID	None	None	RIGID	Typical
272	M421	N384	N340			RIGID	None	None	RIGID	Typical
273	M422	N341	N309			RIGID	None	None	RIGID	Typical
274	M423	N335	N336			RIGID	None	None	RIGID	Typical
275	M424	N311	N312		180	L3x3x6	Beam	Single Angle	Q235	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
276	M425	N358	N374			RIGID	None	None	RIGID	Typical
277	M426	N359	N385			RIGID	None	None	RIGID	Typical
278	M422A	N152	N385A			RIGID	None	None	RIGID	Typical
279	M423A	N151	N389			RIGID	None	None	RIGID	Typical
280	M424A	N148A	N390			RIGID	None	None	RIGID	Typical
281	M425A	N149A	N388			RIGID	None	None	RIGID	Typical
282	M426A	N385B	N386B			PIPE_2.5	Beam	Pipe	Q235	Typical
283	M427	N141A	N384A			RIGID	None	None	RIGID	Typical
284	M428	N140	N388A			RIGID	None	None	RIGID	Typical
285	M429	N242	N389A			RIGID	None	None	RIGID	Typical
286	M430	N243	N387A			RIGID	None	None	RIGID	Typical
287	M431	N395	N396			PIPE_2.5	Beam	Pipe	Q235	Typical
288	M432	N235	N394			RIGID	None	None	RIGID	Typical
289	M433	N234	N398			RIGID	None	None	RIGID	Typical
290	M434	N336	N399			RIGID	None	None	RIGID	Typical
291	M435	N337	N397			RIGID	None	None	RIGID	Typical
292	M436	N405	N406			PIPE_2.5	Beam	Pipe	Q235	Typical
293	M437	N329	N404			RIGID	None	None	RIGID	Typical
294	M438	N328	N408			RIGID	None	None	RIGID	Typical
295	M439	N159	N409			RIGID	None	None	RIGID	Typical
296	M440	N160	N407			RIGID	None	None	RIGID	Typical
297	M297	N136A	N142A			3/8x3	Beam	RECT	Q235	Typical
298	M298	N124A	N143A			3/8x3	Beam	RECT	Q235	Typical
299	M299	N116	N113			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
300	M300	N117A	N114			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
301	M301	N115	N110			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
302	M302	N130A	N127A			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
303	M303	N131A	N128A			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
304	M304	N129A	N126A			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
305	M305A	N162A	N160A		90	.5"x4"	Beam	RECT	Q235	Typical
306	M306A	N160A	N159A		90	.5"x4"	Beam	RECT	Q235	Typical
307	M307A	N159A	N154A		90	.5"x4"	Beam	RECT	Q235	Typical
308	M308	N177A	N176A		90	3/8 x4	Beam	RECT	Q235	Typical
309	M309	N176A	N174A		90	3/8 x4	Beam	RECT	Q235	Typical
310	M310	N174A	N157A		90	3/8 x4	Beam	RECT	Q235	Typical
311	M311	N168A	N166			3/8 x 1"	Beam	RECT	Q235	Typical
312	M312	N166	N165A			3/8 x 1"	Beam	RECT	Q235	Typical
313	M313	N165A	N158A			3/8 x 1"	Beam	RECT	Q235	Typical
314	M314	N183A	N173A			3/8 x 1"	Beam	RECT	Q235	Typical
315	M315	N173A	N181A			3/8 x 1"	Beam	RECT	Q235	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
316	M316A	N181A	N172A			3/8 x 1"	Beam	RECT	Q235	Typical
317	M317A	N172A	N158A			3/8 x 1"	Beam	RECT	Q235	Typical
318	M318A	N158A	N181A			3/8 x 1"	Beam	RECT	Q235	Typical
319	M319A	N181A	N165A			3/8 x 1"	Beam	RECT	Q235	Typical
320	M320A	N165A	N173A			3/8 x 1"	Beam	RECT	Q235	Typical
321	M321A	N173A	N166		45	.875x.375	Beam	RECT	Q235	Typical
322	M322A	N182A	N166			.875x.375	Beam	RECT	Q235	Typical
323	M323A	N182A	N167A		45	.875x.375	Beam	RECT	Q235	Typical
324	M324A	N183A	N167A			3/4x3/8	Beam	RECT	Q235	Typical
325	M325A	N183A	N168A		45	3/4x3/8	Beam	RECT	Q235	Typical
326	M326A	N184A	N168A			3/4x3/8	Beam	RECT	Q235	Typical
327	M327A	N184A	N169A		45	3/8 x 5/8	Beam	RECT	Q235	Typical
328	M328A	N185A	N169A			3/8 x 5/8	Beam	RECT	Q235	Typical
329	M329A	N157A	N191A		90	3/8 x4	Beam	RECT	Q235	Typical
330	M330A	N191A	N194A		90	3/8 x4	Beam	RECT	Q235	Typical
331	M331A	N172A	N193A			3/8 x 1"	Beam	RECT	Q235	Typical
332	M332A	N193A	N195A			3/8 x 1"	Beam	RECT	Q235	Typical
333	M333A	N158A	N192A			3/8 x 1"	Beam	RECT	Q235	Typical
334	M334A	N172A	N192A			3/8 x 1"	Beam	RECT	Q235	Typical
335	M335A	N193A	N192A		45	3/8 x 1"	Beam	RECT	Q235	Typical
336	M336A	N154A	N190A		90	.5"x4"	Beam	RECT	Q235	Typical
337	M337A	N189A	N179A		90	3/8 x4	Beam	RECT	Q235	Typical
338	M338A	N156A	N163A		90	.5"x4"	Beam	RECT	Q235	Typical
339	M339A	N187A	N170A			3/8 x 1"	Beam	RECT	Q235	Typical
340	M340A	N188A	N185A			3/8 x 1"	Beam	RECT	Q235	Typical
341	M341A	N163A	N162A		90	.5"x4"	Beam	RECT	Q235	Typical
342	M342A	N170A	N168A			3/8 x 1"	Beam	RECT	Q235	Typical
343	M343A	N185A	N183A			3/8 x 1"	Beam	RECT	Q235	Typical
344	M344	N179A	N177A		90	3/8 x4	Beam	RECT	Q235	Typical
345	M345A	N230	N236			3/8x3	Beam	RECT	Q235	Typical
346	M346A	N218	N237			3/8x3	Beam	RECT	Q235	Typical
347	M347A	N210	N207			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
348	M348A	N211	N208			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
349	M349	N209	N204A			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
350	M350	N224	N221			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
351	M351	N225	N222			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
352	M352	N223	N220			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
353	M353	N256	N254		90	.5"x4"	Beam	RECT	Q235	Typical
354	M354	N254	N253		90	.5"x4"	Beam	RECT	Q235	Typical
355	M355	N253	N248		90	.5"x4"	Beam	RECT	Q235	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
356	M356	N271	N270		90	3/8 x4	Beam	RECT	Q235	Typical
357	M357A	N270	N268		90	3/8 x4	Beam	RECT	Q235	Typical
358	M358A	N268	N251		90	3/8 x4	Beam	RECT	Q235	Typical
359	M359A	N262A	N260			3/8 x 1"	Beam	RECT	Q235	Typical
360	M360A	N260	N259			3/8 x 1"	Beam	RECT	Q235	Typical
361	M361A	N259	N252			3/8 x 1"	Beam	RECT	Q235	Typical
362	M362A	N277	N267			3/8 x 1"	Beam	RECT	Q235	Typical
363	M363A	N267	N275			3/8 x 1"	Beam	RECT	Q235	Typical
364	M364A	N275	N266			3/8 x 1"	Beam	RECT	Q235	Typical
365	M365A	N266	N252			3/8 x 1"	Beam	RECT	Q235	Typical
366	M366A	N252	N275			3/8 x 1"	Beam	RECT	Q235	Typical
367	M367A	N275	N259			3/8 x 1"	Beam	RECT	Q235	Typical
368	M368A	N259	N267			3/8 x 1"	Beam	RECT	Q235	Typical
369	M369A	N267	N260		45	.875x.375	Beam	RECT	Q235	Typical
370	M370A	N276	N260			.875x.375	Beam	RECT	Q235	Typical
371	M371A	N276	N261A		45	.875x.375	Beam	RECT	Q235	Typical
372	M372A	N277	N261A			3/4x3/8	Beam	RECT	Q235	Typical
373	M373A	N277	N262A		45	3/4x3/8	Beam	RECT	Q235	Typical
374	M374A	N278	N262A			3/4x3/8	Beam	RECT	Q235	Typical
375	M375	N278	N263		45	3/8 x 5/8	Beam	RECT	Q235	Typical
376	M376	N279	N263			3/8 x 5/8	Beam	RECT	Q235	Typical
377	M377	N251	N285		90	3/8 x4	Beam	RECT	Q235	Typical
378	M378	N285	N288		90	3/8 x4	Beam	RECT	Q235	Typical
379	M379	N266	N287			3/8 x 1"	Beam	RECT	Q235	Typical
380	M380	N287	N289			3/8 x 1"	Beam	RECT	Q235	Typical
381	M381	N252	N286			3/8 x 1"	Beam	RECT	Q235	Typical
382	M382	N266	N286			3/8 x 1"	Beam	RECT	Q235	Typical
383	M383	N287	N286		45	3/8 x 1"	Beam	RECT	Q235	Typical
384	M384	N248	N284		90	.5"x4"	Beam	RECT	Q235	Typical
385	M385	N283	N273		90	3/8 x4	Beam	RECT	Q235	Typical
386	M386	N250	N257		90	.5"x4"	Beam	RECT	Q235	Typical
387	M387	N281	N264			3/8 x 1"	Beam	RECT	Q235	Typical
388	M388A	N282	N279			3/8 x 1"	Beam	RECT	Q235	Typical
389	M389	N257	N256		90	.5"x4"	Beam	RECT	Q235	Typical
390	M390	N264	N262A			3/8 x 1"	Beam	RECT	Q235	Typical
391	M391	N279	N277			3/8 x 1"	Beam	RECT	Q235	Typical
392	M392	N273	N271		90	3/8 x4	Beam	RECT	Q235	Typical
393	M393	N324	N330			3/8x3	Beam	RECT	Q235	Typical
394	M394	N312	N331			3/8x3	Beam	RECT	Q235	Typical
395	M395	N304	N301			.5 x 2 3/8 "	Beam	RECT	Q235	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
396	M396	N305	N302			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
397	M397	N303	N298			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
398	M398	N318	N315			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
399	M399	N319	N316			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
400	M400A	N317	N314			.5 x 2 3/8 "	Beam	RECT	Q235	Typical
401	M401A	N350	N348		90	.5"x4"	Beam	RECT	Q235	Typical
402	M402	N348	N347		90	.5"x4"	Beam	RECT	Q235	Typical
403	M403	N347	N342		90	.5"x4"	Beam	RECT	Q235	Typical
404	M404	N365	N364		90	3/8 x4	Beam	RECT	Q235	Typical
405	M405	N364	N362		90	3/8 x4	Beam	RECT	Q235	Typical
406	M406	N362	N345		90	3/8 x4	Beam	RECT	Q235	Typical
407	M407	N356	N354			3/8 x 1"	Beam	RECT	Q235	Typical
408	M408	N354	N353			3/8 x 1"	Beam	RECT	Q235	Typical
409	M409	N353	N346			3/8 x 1"	Beam	RECT	Q235	Typical
410	M410A	N371	N361			3/8 x 1"	Beam	RECT	Q235	Typical
411	M411A	N361	N369			3/8 x 1"	Beam	RECT	Q235	Typical
412	M412A	N369	N360			3/8 x 1"	Beam	RECT	Q235	Typical
413	M413	N360	N346			3/8 x 1"	Beam	RECT	Q235	Typical
414	M414	N346	N369			3/8 x 1"	Beam	RECT	Q235	Typical
415	M415	N369	N353			3/8 x 1"	Beam	RECT	Q235	Typical
416	M416	N353	N361			3/8 x 1"	Beam	RECT	Q235	Typical
417	M417	N361	N354		45	.875x.375	Beam	RECT	Q235	Typical
418	M418	N370	N354			.875x.375	Beam	RECT	Q235	Typical
419	M419	N370	N355		45	.875x.375	Beam	RECT	Q235	Typical
420	M420	N371	N355			3/4x3/8	Beam	RECT	Q235	Typical
421	M421A	N371	N356		45	3/4x3/8	Beam	RECT	Q235	Typical
422	M422B	N372	N356			3/4x3/8	Beam	RECT	Q235	Typical
423	M423B	N372	N357		45	3/8 x 5/8	Beam	RECT	Q235	Typical
424	M424B	N373	N357			3/8 x 5/8	Beam	RECT	Q235	Typical
425	M425B	N345	N379		90	3/8 x4	Beam	RECT	Q235	Typical
426	M426B	N379	N382		90	3/8 x4	Beam	RECT	Q235	Typical
427	M427A	N360	N381			3/8 x 1"	Beam	RECT	Q235	Typical
428	M428A	N381	N383			3/8 x 1"	Beam	RECT	Q235	Typical
429	M429A	N346	N380			3/8 x 1"	Beam	RECT	Q235	Typical
430	M430A	N360	N380			3/8 x 1"	Beam	RECT	Q235	Typical
431	M431A	N381	N380		45	3/8 x 1"	Beam	RECT	Q235	Typical
432	M432A	N342	N378		90	.5"x4"	Beam	RECT	Q235	Typical
433	M433A	N377	N367		90	3/8 x4	Beam	RECT	Q235	Typical
434	M434A	N344	N351		90	.5"x4"	Beam	RECT	Q235	Typical
435	M435A	N375	N358			3/8 x 1"	Beam	RECT	Q235	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
436	M436A	N376	N373			3/8 x 1"	Beam	RECT	Q235	Typical
437	M437A	N351	N350		90	.5"x4"	Beam	RECT	Q235	Typical
438	M438A	N358	N356			3/8 x 1"	Beam	RECT	Q235	Typical
439	M439A	N373	N371			3/8 x 1"	Beam	RECT	Q235	Typical
440	M440A	N367	N365		90	3/8 x4	Beam	RECT	Q235	Typical
441	M441	N135	N136A			Pipe 1.5	Beam	Pipe	A53 Gr.B	Typical
442	M442	N129	N132A			Pipe_1.5	Beam	Pipe	A53 Gr.B	Typical
443	M443	N400	N401			3/16 x1 1/2	Beam	RECT	Q235	Typical
444	M444	N402	N403			3/16 x1 1/2	Beam	RECT	Q235	Typical
445	M445	N404A	N405A			3/16 x1 1/2	Beam	RECT	Q235	Typical
446	M446	N124A	N230			Pipe_1.5	Beam	Pipe	A53 Gr.B	Typical
447	M447	N118A	N226			Pipe 1.5	Beam	Pipe	A53 Gr.B	Typical
448	M448	N410	N411			3/16 x1 1/2	Beam	RECT	Q235	Typical
449	M449	N412	N413			3/16 x1 1/2	Beam	RECT	Q235	Typical
450	M450	N414	N415			3/16 x1 1/2	Beam	RECT	Q235	Typical
451	M451	N218	N324			Pipe 1.5	Beam	Pipe	A53 Gr.B	Typical
452	M452	N212	N320			Pipe_1.5	Beam	Pipe	A53 Gr.B	Typical
453	M453	N420	N421			3/16 x1 1/2	Beam	RECT	Q235	Typical
454	M454	N422	N423			3/16 x1 1/2	Beam	RECT	Q235	Typical
455	M455	N424	N425			3/16 x1 1/2	Beam	RECT	Q235	Typical
456	M456	N312	N147			Pipe_1.5	Beam	Pipe	A53 Gr.B	Typical
457	M457	N306	N143			Pipe 1.5	Beam	Pipe	A53 Gr.B	Typical
458	M458	N430	N431			3/16 x1 1/2	Beam	RECT	Q235	Typical
459	M459	N432	N433			3/16 x1 1/2	Beam	RECT	Q235	Typical
460	M460	N434	N435			3/16 x1 1/2	Beam	RECT	Q235	Typical
461	M461	N398A	N399A			Pipe 2.0	Beam	Pipe	A53 Gr.B	Typical
462	M462	N425A	N427			RIGID	None	None	RIGID	Typical
463	M463	N424A	N426			RIGID	None	None	RIGID	Typical
464	M464	N428	N429			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
465	M465	N431A	N433A			RIGID	None	None	RIGID	Typical
466	M466	N430A	N432A			RIGID	None	None	RIGID	Typical
467	MP3	N434A	N435A			Pipe 2.0	Beam	Pipe	A53 Gr.B	Typical
468	M468	N437	N439			RIGID	None	None	RIGID	Typical
469	M469	N436	N438			RIGID	None	None	RIGID	Typical
470	MP2	N440	N441			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
471	M471	N443	N445			RIGID	None	None	RIGID	Typical
472	M472	N442	N444			RIGID	None	None	RIGID	Typical
473	MP1	N446	N447			Pipe 2.0	Beam	Pipe	A53 Gr.B	Typical
474	M474	N448	N449			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
475	M475	N451	N453			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
476	M476	N450	N452			RIGID	None	None	RIGID	Typical
477	M477	N454	N455			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
478	M478	N457	N459			RIGID	None	None	RIGID	Typical
479	M479	N456	N458			RIGID	None	None	RIGID	Typical
480	MP12	N460	N461			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
481	M481	N463	N465			RIGID	None	None	RIGID	Typical
482	M482	N462	N464			RIGID	None	None	RIGID	Typical
483	MP11	N466	N467			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
484	M484	N469	N471			RIGID	None	None	RIGID	Typical
485	M485	N468	N470			RIGID	None	None	RIGID	Typical
486	MP10	N472	N473			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
487	M487	N474	N475			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
488	M488	N477	N479			RIGID	None	None	RIGID	Typical
489	M489	N476	N478			RIGID	None	None	RIGID	Typical
490	M490	N480	N481			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
491	M491	N483	N485			RIGID	None	None	RIGID	Typical
492	M492	N482	N484			RIGID	None	None	RIGID	Typical
493	MP9	N486	N487			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
494	M494	N489	N491			RIGID	None	None	RIGID	Typical
495	M495	N488	N490			RIGID	None	None	RIGID	Typical
496	MP8	N492	N493			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
497	M497	N495	N497			RIGID	None	None	RIGID	Typical
498	M498	N494	N496			RIGID	None	None	RIGID	Typical
499	MP7	N498	N499			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
500	M500	N500	N501			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
501	M501	N503	N505			RIGID	None	None	RIGID	Typical
502	M502	N502	N504			RIGID	None	None	RIGID	Typical
503	M503	N506	N507			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
504	M504	N509	N511			RIGID	None	None	RIGID	Typical
505	M505	N508	N510			RIGID	None	None	RIGID	Typical
506	MP6	N512	N513			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
507	M507	N515	N517			RIGID	None	None	RIGID	Typical
508	M508	N514	N516			RIGID	None	None	RIGID	Typical
509	MP5	N518	N519			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
510	M510	N521	N523			RIGID	None	None	RIGID	Typical
511	M511	N520	N522			RIGID	None	None	RIGID	Typical
512	MP4	N524	N525			Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
513	M513	N521	N425A			RIGID	None	None	RIGID	Typical
514	M514	N443	N451			RIGID	None	None	RIGID	Typical
515	M515	N469	N477			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
516	M516	N495	N503			RIGID	None	None	RIGID	Typical
517	M517	N205	N527			3/8 x 1"	Beam	RECT	Q235	Typical
518	M518	N527	N209A		45	3/8 x 1"	Beam	RECT	Q235	Typical
519	M519	N529	N527			RIGID	None	None	RIGID	Typical
520	M520	N204	N527			3/8 x 1"	Beam	RECT	Q235	Typical
521	M521	N202	N529		90	.5"x4"	Beam	RECT	Q235	Typical
522	M522	N193A	N533			3/8 x 1"	Beam	RECT	Q235	Typical
523	M523	N533	N195A		45	3/8 x 1"	Beam	RECT	Q235	Typical
524	M524	N534	N533			RIGID	None	None	RIGID	Typical
525	M525	N192A	N533			3/8 x 1"	Beam	RECT	Q235	Typical
526	M526	N190A	N534		90	.5"x4"	Beam	RECT	Q235	Typical
527	M527	N287	N539			3/8 x 1"	Beam	RECT	Q235	Typical
528	M528	N539	N289		45	3/8 x 1"	Beam	RECT	Q235	Typical
529	M529	N540	N539			RIGID	None	None	RIGID	Typical
530	M530	N286	N539			3/8 x 1"	Beam	RECT	Q235	Typical
531	M531	N284	N540		90	.5"x4"	Beam	RECT	Q235	Typical
532	M532	N381	N545			3/8 x 1"	Beam	RECT	Q235	Typical
533	M533	N545	N383		45	3/8 x 1"	Beam	RECT	Q235	Typical
534	M534	N546	N545			RIGID	None	None	RIGID	Typical
535	M535	N380	N545			3/8 x 1"	Beam	RECT	Q235	Typical
536	M536	N378	N546		90	.5"x4"	Beam	RECT	Q235	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M121						Yes	** NA **			None
2	M122						Yes	** NA **			None
3	M123						Yes	** NA **			None
4	M124						Yes	** NA **			None
5	M125						Yes	** NA **			None
6	M126						Yes	** NA **			None
7	M127						Yes	** NA **			None
8	M128						Yes	** NA **			None
9	M129						Yes	** NA **			None
10	M130						Yes	** NA **			None
11	M131						Yes	** NA **			None
12	M132						Yes	** NA **			None
13	M133						Yes	** NA **			None
14	M134						Yes	** NA **			None
15	M135						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
16	M136						Yes	** NA **			None
17	M137		OOOXOO				Yes	** NA **			None
18	M138A						Yes	** NA **			None
19	M139		OOOXOO				Yes	** NA **			None
20	M140						Yes	** NA **			None
21	M141		OOOXOO				Yes	** NA **			None
22	M143		OOOXOO				Yes	** NA **			None
23	M144						Yes	** NA **			None
24	M146						Yes				None
25	M147						Yes				None
26	M148						Yes				None
27	M149						Yes				None
28	M150						Yes				None
29	M151						Yes				None
30	M152A						Yes				None
31	M153A						Yes				None
32	M154A						Yes				None
33	M155A						Yes				None
34	M156						Yes				None
35	M157						Yes				None
36	M158						Yes	** NA **			None
37	M159						Yes	** NA **			None
38	M160						Yes	** NA **			None
39	M161						Yes	** NA **			None
40	M162						Yes	** NA **			None
41	M163						Yes	** NA **			None
42	M164						Yes	** NA **			None
43	M165						Yes	** NA **			None
44	M166						Yes	** NA **			None
45	M167						Yes	** NA **			None
46	M168						Yes	** NA **			None
47	M169						Yes	** NA **			None
48	M170						Yes	** NA **			None
49	M171						Yes	** NA **			None
50	M172						Yes	** NA **			None
51	M173						Yes	** NA **			None
52	M174						Yes	** NA **			None
53	M175						Yes	** NA **			None
54	M176						Yes				None
55	M177						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
56	M178						Yes				None
57	M179						Yes				None
58	M180						Yes				None
59	M181						Yes				None
60	M182						Yes				None
61	M183						Yes				None
62	M184						Yes				None
63	M185						Yes				None
64	M186						Yes				None
65	M187						Yes				None
66	M188						Yes				None
67	M189						Yes	** NA **			None
68	M190						Yes				None
69	M191						Yes				None
70	M192						Yes				None
71	M193						Yes				None
72	M194						Yes				None
73	M195						Yes				None
74	M196						Yes				None
75	M197						Yes				None
76	M198						Yes				None
77	M199						Yes				None
78	M200						Yes				None
79	M201						Yes	** NA **			None
80	M202						Yes	** NA **			None
81	M203						Yes				None
82	M204						Yes				None
83	M205						Yes				None
84	M206						Yes				None
85	M207						Yes				None
86	M209						Yes				None
87	M210						Yes				None
88	M213						Yes				None
89	M215						Yes	** NA **			None
90	M217						Yes	** NA **			None
91	M218						Yes	** NA **			None
92	M219						Yes				None
93	M220						Yes				None
94	M221						Yes				None
95	M222						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
96	M223						Yes				None
97	M224						Yes				None
98	M225						Yes				None
99	M226						Yes				None
100	M227						Yes	** NA **			None
101	M228						Yes	** NA **			None
102	M229						Yes	** NA **			None
103	M230						Yes				None
104	M231						Yes				None
105	M453A						Yes	** NA **			None
106	M454A						Yes	** NA **			None
107	M112						Yes	** NA **			None
108	M113						Yes	** NA **			None
109	M114						Yes	** NA **			None
110	M115						Yes	** NA **			None
111	M116						Yes	** NA **			None
112	M117						Yes	** NA **			None
113	M118						Yes	** NA **			None
114	M119						Yes	** NA **			None
115	M120						Yes	** NA **			None
116	M121A						Yes	** NA **			None
117	M122A						Yes	** NA **			None
118	M123A						Yes	** NA **			None
119	M124A						Yes	** NA **			None
120	M125A						Yes	** NA **			None
121	M126A						Yes	** NA **			None
122	M127A						Yes	** NA **			None
123	M128A		OOOXOO				Yes	** NA **			None
124	M129A						Yes	** NA **			None
125	M130A		OOOXOO				Yes	** NA **			None
126	M131A						Yes	** NA **			None
127	M132A		OOOXOO				Yes	** NA **			None
128	M133A		OOOXOO				Yes	** NA **			None
129	M134A						Yes	** NA **			None
130	M135A						Yes				None
131	M136A						Yes				None
132	M137A						Yes				None
133	M138						Yes				None
134	M147A						Yes	** NA **			None
135	M148A						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
136	M149A						Yes	** NA **			None
137	M150A						Yes	** NA **			None
138	M151A						Yes	** NA **			None
139	M152						Yes	** NA **			None
140	M153						Yes	** NA **			None
141	M154						Yes	** NA **			None
142	M155						Yes	** NA **			None
143	M156A						Yes	** NA **			None
144	M157A						Yes	** NA **			None
145	M158A						Yes	** NA **			None
146	M159A						Yes	** NA **			None
147	M160A						Yes	** NA **			None
148	M161A						Yes	** NA **			None
149	M162A						Yes	** NA **			None
150	M163A						Yes	** NA **			None
151	M164A						Yes	** NA **			None
152	M178A						Yes	** NA **			None
153	M190A						Yes	** NA **			None
154	M191A						Yes	** NA **			None
155	M200A						Yes	** NA **			None
156	M201A						Yes	** NA **			None
157	M202A						Yes	** NA **			None
158	M211						Yes	** NA **			None
159	M212						Yes	** NA **			None
160	M213A						Yes	** NA **			None
161	M214						Yes				None
162	M215A						Yes	** NA **			None
163	M216						Yes	** NA **			None
164	M217A						Yes	** NA **			None
165	M218A						Yes	** NA **			None
166	M219A						Yes	** NA **			None
167	M220A						Yes	** NA **			None
168	M221A						Yes	** NA **			None
169	M222A						Yes	** NA **			None
170	M223A						Yes	** NA **			None
171	M224A						Yes	** NA **			None
172	M225A						Yes	** NA **			None
173	M226A						Yes	** NA **			None
174	M227A						Yes	** NA **			None
175	M228A						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
176	M229A						Yes	** NA **			None
177	M230A						Yes	** NA **			None
178	M231A						Yes	** NA **			None
179	M232						Yes	** NA **			None
180	M233A		OOOXOO				Yes	** NA **			None
181	M234A						Yes	** NA **			None
182	M235		OOOXOO				Yes	** NA **			None
183	M236						Yes	** NA **			None
184	M237		OOOXOO				Yes	** NA **			None
185	M238		OOOXOO				Yes	** NA **			None
186	M239						Yes	** NA **			None
187	M240						Yes				None
188	M241						Yes				None
189	M242						Yes				None
190	M243						Yes				None
191	M252						Yes	** NA **			None
192	M253						Yes	** NA **			None
193	M254						Yes	** NA **			None
194	M255						Yes	** NA **			None
195	M256						Yes	** NA **			None
196	M257						Yes	** NA **			None
197	M258						Yes	** NA **			None
198	M259						Yes	** NA **			None
199	M260						Yes	** NA **			None
200	M261						Yes	** NA **			None
201	M262						Yes	** NA **			None
202	M263						Yes	** NA **			None
203	M264						Yes	** NA **			None
204	M265						Yes	** NA **			None
205	M266						Yes	** NA **			None
206	M267						Yes	** NA **			None
207	M268						Yes	** NA **			None
208	M269						Yes	** NA **			None
209	M283						Yes	** NA **			None
210	M295						Yes	** NA **			None
211	M296						Yes	** NA **			None
212	M305						Yes	** NA **			None
213	M306						Yes	** NA **			None
214	M307						Yes	** NA **			None
215	M316						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
216	M317						Yes	** NA **			None
217	M318						Yes	** NA **			None
218	M319						Yes				None
219	M320						Yes	** NA **			None
220	M321						Yes	** NA **			None
221	M322						Yes	** NA **			None
222	M323						Yes	** NA **			None
223	M324						Yes	** NA **			None
224	M325						Yes	** NA **			None
225	M326						Yes	** NA **			None
226	M327						Yes	** NA **			None
227	M328						Yes	** NA **			None
228	M329						Yes	** NA **			None
229	M330						Yes	** NA **			None
230	M331						Yes	** NA **			None
231	M332						Yes	** NA **			None
232	M333						Yes	** NA **			None
233	M334						Yes	** NA **			None
234	M335						Yes	** NA **			None
235	M336						Yes	** NA **			None
236	M337						Yes	** NA **			None
237	M338		OOOXOO				Yes	** NA **			None
238	M339						Yes	** NA **			None
239	M340		OOOXOO				Yes	** NA **			None
240	M341						Yes	** NA **			None
241	M342		OOOXOO				Yes	** NA **			None
242	M343		OOOXOO				Yes	** NA **			None
243	M344A						Yes	** NA **			None
244	M345						Yes				None
245	M346						Yes				None
246	M347						Yes				None
247	M348						Yes				None
248	M357						Yes	** NA **			None
249	M358						Yes	** NA **			None
250	M359						Yes	** NA **			None
251	M360						Yes	** NA **			None
252	M361						Yes	** NA **			None
253	M362						Yes	** NA **			None
254	M363						Yes	** NA **			None
255	M364						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
256	M365						Yes	** NA **			None
257	M366						Yes	** NA **			None
258	M367						Yes	** NA **			None
259	M368						Yes	** NA **			None
260	M369						Yes	** NA **			None
261	M370						Yes	** NA **			None
262	M371						Yes	** NA **			None
263	M372						Yes	** NA **			None
264	M373						Yes	** NA **			None
265	M374						Yes	** NA **			None
266	M388						Yes	** NA **			None
267	M400						Yes	** NA **			None
268	M401						Yes	** NA **			None
269	M410						Yes	** NA **			None
270	M411						Yes	** NA **			None
271	M412						Yes	** NA **			None
272	M421						Yes	** NA **			None
273	M422						Yes	** NA **			None
274	M423						Yes	** NA **			None
275	M424						Yes				None
276	M425						Yes	** NA **			None
277	M426						Yes	** NA **			None
278	M422A						Yes	** NA **			None
279	M423A						Yes	** NA **			None
280	M424A						Yes	** NA **			None
281	M425A						Yes	** NA **			None
282	M426A						Yes				None
283	M427						Yes	** NA **			None
284	M428						Yes	** NA **			None
285	M429						Yes	** NA **			None
286	M430						Yes	** NA **			None
287	M431						Yes				None
288	M432						Yes	** NA **			None
289	M433						Yes	** NA **			None
290	M434						Yes	** NA **			None
291	M435						Yes	** NA **			None
292	M436						Yes				None
293	M437						Yes	** NA **			None
294	M438						Yes	** NA **			None
295	M439						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
296	M440						Yes	** NA **			None
297	M297						Yes				None
298	M298						Yes				None
299	M299						Yes				None
300	M300						Yes				None
301	M301						Yes				None
302	M302						Yes				None
303	M303						Yes				None
304	M304						Yes				None
305	M305A						Yes				None
306	M306A						Yes				None
307	M307A						Yes				None
308	M308						Yes				None
309	M309						Yes				None
310	M310						Yes				None
311	M311						Yes				None
312	M312						Yes				None
313	M313						Yes				None
314	M314						Yes				None
315	M315						Yes				None
316	M316A						Yes				None
317	M317A						Yes				None
318	M318A						Yes				None
319	M319A						Yes				None
320	M320A						Yes				None
321	M321A						Yes				None
322	M322A						Yes				None
323	M323A						Yes				None
324	M324A						Yes				None
325	M325A						Yes				None
326	M326A						Yes				None
327	M327A						Yes				None
328	M328A						Yes				None
329	M329A						Yes				None
330	M330A						Yes				None
331	M331A						Yes				None
332	M332A						Yes				None
333	M333A						Yes				None
334	M334A						Yes				None
335	M335A						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
336	M336A						Yes				None
337	M337A						Yes				None
338	M338A						Yes				None
339	M339A						Yes				None
340	M340A						Yes				None
341	M341A						Yes				None
342	M342A						Yes				None
343	M343A						Yes				None
344	M344						Yes				None
345	M345A						Yes				None
346	M346A						Yes				None
347	M347A						Yes				None
348	M348A						Yes				None
349	M349						Yes				None
350	M350						Yes				None
351	M351						Yes				None
352	M352						Yes				None
353	M353						Yes				None
354	M354						Yes				None
355	M355						Yes				None
356	M356						Yes				None
357	M357A						Yes				None
358	M358A						Yes				None
359	M359A						Yes				None
360	M360A						Yes				None
361	M361A						Yes				None
362	M362A						Yes				None
363	M363A						Yes				None
364	M364A						Yes				None
365	M365A						Yes				None
366	M366A						Yes				None
367	M367A						Yes				None
368	M368A						Yes				None
369	M369A						Yes				None
370	M370A						Yes				None
371	M371A						Yes				None
372	M372A						Yes				None
373	M373A						Yes				None
374	M374A						Yes				None
375	M375						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
376	M376						Yes				None
377	M377						Yes				None
378	M378						Yes				None
379	M379						Yes				None
380	M380						Yes				None
381	M381						Yes				None
382	M382						Yes				None
383	M383						Yes				None
384	M384						Yes				None
385	M385						Yes				None
386	M386						Yes				None
387	M387						Yes				None
388	M388A						Yes				None
389	M389						Yes				None
390	M390						Yes				None
391	M391						Yes				None
392	M392						Yes				None
393	M393						Yes				None
394	M394						Yes				None
395	M395						Yes				None
396	M396						Yes				None
397	M397						Yes				None
398	M398						Yes				None
399	M399						Yes				None
400	M400A						Yes				None
401	M401A						Yes				None
402	M402						Yes				None
403	M403						Yes				None
404	M404						Yes				None
405	M405						Yes				None
406	M406						Yes				None
407	M407						Yes				None
408	M408						Yes				None
409	M409						Yes				None
410	M410A						Yes				None
411	M411A						Yes				None
412	M412A						Yes				None
413	M413						Yes				None
414	M414						Yes				None
415	M415						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
416	M416						Yes				None
417	M417						Yes				None
418	M418						Yes				None
419	M419						Yes				None
420	M420						Yes				None
421	M421A						Yes				None
422	M422B						Yes				None
423	M423B						Yes				None
424	M424B						Yes				None
425	M425B						Yes				None
426	M426B						Yes				None
427	M427A						Yes				None
428	M428A						Yes				None
429	M429A						Yes				None
430	M430A						Yes				None
431	M431A						Yes				None
432	M432A						Yes				None
433	M433A						Yes				None
434	M434A						Yes				None
435	M435A						Yes				None
436	M436A						Yes				None
437	M437A						Yes				None
438	M438A						Yes				None
439	M439A						Yes				None
440	M440A						Yes				None
441	M441	BenPIN	BenPIN				Yes				None
442	M442	BenPIN	BenPIN				Yes				None
443	M443						Yes				None
444	M444						Yes				None
445	M445						Yes				None
446	M446	BenPIN	BenPIN				Yes				None
447	M447	BenPIN	BenPIN				Yes				None
448	M448						Yes				None
449	M449						Yes				None
450	M450						Yes				None
451	M451	BenPIN	BenPIN				Yes				None
452	M452	BenPIN	BenPIN				Yes				None
453	M453						Yes				None
454	M454						Yes				None
455	M455						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
456	M456	BenPIN	BenPIN				Yes				None
457	M457	BenPIN	BenPIN				Yes				None
458	M458						Yes				None
459	M459						Yes				None
460	M460						Yes				None
461	M461						Yes	Default			None
462	M462						Yes	** NA **			None
463	M463						Yes	** NA **			None
464	M464						Yes				None
465	M465						Yes	** NA **			None
466	M466						Yes	** NA **			None
467	MP3						Yes				None
468	M468						Yes	** NA **			None
469	M469						Yes	** NA **			None
470	MP2						Yes				None
471	M471						Yes	** NA **			None
472	M472						Yes	** NA **			None
473	MP1						Yes	Default			None
474	M474						Yes	Default			None
475	M475						Yes	** NA **			None
476	M476						Yes	** NA **			None
477	M477						Yes				None
478	M478						Yes	** NA **			None
479	M479						Yes	** NA **			None
480	MP12						Yes				None
481	M481						Yes	** NA **			None
482	M482						Yes	** NA **			None
483	MP11						Yes				None
484	M484						Yes	** NA **			None
485	M485						Yes	** NA **			None
486	MP10						Yes				None
487	M487						Yes	Default			None
488	M488						Yes	** NA **			None
489	M489						Yes	** NA **			None
490	M490						Yes				None
491	M491						Yes	** NA **			None
492	M492						Yes	** NA **			None
493	MP9						Yes				None
494	M494						Yes	** NA **			None
495	M495						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
496	MP8						Yes				None
497	M497						Yes	** NA **			None
498	M498						Yes	** NA **			None
499	MP7						Yes				None
500	M500						Yes	Default			None
501	M501						Yes	** NA **			None
502	M502						Yes	** NA **			None
503	M503						Yes				None
504	M504						Yes	** NA **			None
505	M505						Yes	** NA **			None
506	MP6						Yes				None
507	M507						Yes	** NA **			None
508	M508						Yes	** NA **			None
509	MP5						Yes				None
510	M510						Yes	** NA **			None
511	M511						Yes	** NA **			None
512	MP4						Yes				None
513	M513						Yes	** NA **			None
514	M514						Yes	** NA **			None
515	M515						Yes	** NA **			None
516	M516						Yes	** NA **			None
517	M517						Yes				None
518	M518						Yes				None
519	M519						Yes	** NA **			None
520	M520						Yes				None
521	M521						Yes				None
522	M522						Yes				None
523	M523						Yes				None
524	M524						Yes	** NA **			None
525	M525						Yes				None
526	M526						Yes				None
527	M527						Yes				None
528	M528						Yes				None
529	M529						Yes	** NA **			None
530	M530						Yes				None
531	M531						Yes				None
532	M532						Yes				None
533	M533						Yes				None
534	M534						Yes	** NA **			None
535	M535						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
536	M536						Yes				None

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
1	Dead Load	DL		-1			24		12	
2	Wind 0	WLZ					48			
3	Wind 30	None					48			
4	Wind 60	None					48			
5	Wind 90	WLX					48			
6	Wind 120	None					48			
7	Wind 150	None					48			
8	Wind 180	WLZ					48			
9	Ice Weight	DL					24	532	12	
10	Ice + Wind 0	WLZ					48			
11	Ice + Wind 30	None					48			
12	Ice + Wind 60	None					48			
13	Ice + Wind 90	WLX					48			
14	Ice + Wind 120	None					48			
15	Ice + Wind 150	None					48			
16	Ice + Wind 180	WLZ					48			
17	Distri. Wind Z	WLZ						532		
18	Distri. Wind X	WLX						532		
19	Distri. Ice + Wind...	WLZ						532		
20	Distrr. Ice + Wind...	WLX						532		
21	Seismic Load Z	ELZ					24	532		
22	Seismic Load X	ELX					24	532		
23	Live Load 1	LL					4			
24	Live Load 2	LL					4			
25	Live Load 3	LL					4			
26	BLC 1 Transient ...	None						331		
27	BLC 9 Transient ...	None						331		

Load Combinations

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	1.4D	Yes	Y		1	1.4																		
2	1.2D + 1.6W 0°	Yes	Y		1	1.2	2	1.6	17	1.6	18													
3	1.2D + 1.6W 30°	Yes	Y		1	1.2	3	1.6	17	1.386	18	.8												

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
4	1.2D + 1.6W 60°	Yes	Y		1	1.2	4	1.6	17	.8	18	1.386												
5	1.2D + 1.6W 90°	Yes	Y		1	1.2	5	1.6	17		18	1.6												
6	1.2D + 1.6W 120°	Yes	Y		1	1.2	6	1.6	17	-.8	18	1.386												
7	1.2D + 1.6W 150°	Yes	Y		1	1.2	7	1.6	17	-1.3...	18	.8												
8	1.2D + 1.6W 180°	Yes	Y		1	1.2	8	1.6	17	-1.6	18													
9	0.9D + 1.6W 0°	Yes	Y		1	.9	2	1.6	17	1.6	18													
10	0.9D + 1.6W 30°	Yes	Y		1	.9	3	1.6	17	1.386	18	.8												
11	0.9D + 1.6W 60°	Yes	Y		1	.9	4	1.6	17	.8	18	1.386												
12	0.9D + 1.6W 90°	Yes	Y		1	.9	5	1.6	17		18	1.6												
13	0.9D + 1.6W 120°	Yes	Y		1	.9	6	1.6	17	-.8	18	1.386												
14	0.9D + 1.6W 150°	Yes	Y		1	.9	7	1.6	17	-1.3...	18	.8												
15	0.9D + 1.6W 180°	Yes	Y		1	.9	8	1.6	17	-1.6	18													
16	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	10	1	19	1	20											
17	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	11	1	19	.866	20	.5										
18	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	12	1	19	.5	20	.866										
19	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	13	1	19		20	1										
20	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	14	1	19	-.5	20	.866										
21	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	15	1	19	-.866	20	.5										
22	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	16	1	19	-1	20											
23	1.2D + 1.0Eh 0°	Yes	Y		1	1.2	21	1	22															
24	1.2D + 1.0Eh 30°	Yes	Y		1	1.2	21	.866	22	.5														
25	1.2D + 1.0Eh 60°	Yes	Y		1	1.2	21	.5	22	.866														
26	1.2D + 1.0Eh 90°	Yes	Y		1	1.2	21		22	1														
27	1.2D + 1.0Eh 120°	Yes	Y		1	1.2	21	-.5	22	.866														
28	1.2D + 1.0Eh 150°	Yes	Y		1	1.2	21	-.866	22	.5														
29	1.2D + 1.0Eh 180°	Yes	Y		1	1.2	21	-1	22															
30	0.9D + 1.0Eh 0°	Yes	Y		1	.9	21	1	22															
31	0.9D + 1.0Eh 30°	Yes	Y		1	.9	21	.866	22	.5														
32	0.9D + 1.0Eh 60°	Yes	Y		1	.9	21	.5	22	.866														
33	0.9D + 1.0Eh 90°	Yes	Y		1	.9	21		22	1														
34	0.9D + 1.0Eh 120°	Yes	Y		1	.9	21	-.5	22	.866														
35	0.9D + 1.0Eh 150°	Yes	Y		1	.9	21	-.866	22	.5														
36	0.9D + 1.0Eh 180°	Yes	Y		1	.9	21	-1	22															
37	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	23	1.5	2	.342	17	.342	18											
38	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	23	1.5	3	.342	17	.296	18	.171										
39	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	23	1.5	4	.342	17	.171	18	.296										
40	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	23	1.5	5	.342	17		18	.342										
41	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	23	1.5	6	.342	17	-.171	18	.296										
42	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	23	1.5	7	.342	17	-.296	18	.171										
43	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	23	1.5	8	.342	17	-.342	18											

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
44	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	24	1.5	2	.342	17	.342	18											
45	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	24	1.5	3	.342	17	.296	18	.171										
46	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	24	1.5	4	.342	17	.171	18	.296										
47	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	24	1.5	5	.342	17		18	.342										
48	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	24	1.5	6	.342	17	-.171	18	.296										
49	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	24	1.5	7	.342	17	-.296	18	.171										
50	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	24	1.5	8	.342	17	-.342	18											
51	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	25	1.5	2	.342	17	.342	18											
52	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	25	1.5	3	.342	17	.296	18	.171										
53	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	25	1.5	4	.342	17	.171	18	.296										
54	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	25	1.5	5	.342	17		18	.342										
55	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	25	1.5	6	.342	17	-.171	18	.296										
56	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	25	1.5	7	.342	17	-.296	18	.171										
57	1.0D +1.5Lv + 1.0W...	Yes	Y		1	1	25	1.5	8	.342	17	-.342	18											
58	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	23	1	2	.096	17	.096	18											
59	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	23	1	3	.096	17	.083	18	.048										
60	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	23	1	4	.096	17	.048	18	.083										
61	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	23	1	5	.096	17		18	.096										
62	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	23	1	6	.096	17	-.048	18	.083										
63	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	23	1	7	.096	17	-.083	18	.048										
64	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	23	1	8	.096	17	-.096	18											
65	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	24	1	2	.096	17	.096	18											
66	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	24	1	3	.096	17	.083	18	.048										
67	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	24	1	4	.096	17	.048	18	.083										
68	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	24	1	5	.096	17		18	.096										
69	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	24	1	6	.096	17	-.048	18	.083										
70	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	24	1	7	.096	17	-.083	18	.048										
71	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	24	1	8	.096	17	-.096	18											
72	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	25	1	2	.096	17	.096	18											
73	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	25	1	3	.096	17	.083	18	.048										
74	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	25	1	4	.096	17	.048	18	.083										
75	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	25	1	5	.096	17		18	.096										
76	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	25	1	6	.096	17	-.048	18	.083										
77	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	25	1	7	.096	17	-.083	18	.048										
78	1.2D + 1.0Lv + 1.0...	Yes	Y		1	1.2	25	1	8	.096	17	-.096	18											

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc.....	...		phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....		Eqn
1	M177	.5" x 4"	.936	3.888	19	.102	0	z	21	61925....	63000	656.25	5250	...	H1-1b
2	M306A	.5" x 4"	.924	3.888	22	.090	0	z	22	61925....	63000	656.25	5250	...	H1-1b
3	M354	.5" x 4"	.703	3.888	16	.079	0	z	16	61925....	63000	656.25	5250	...	H1-1b
4	M191	3/8 x 1"	.672	8.633	21	.029	8.633	y	7	10294....	11812.5	92.284	246.094	...	H1-1a
5	M319A	3/8 x 1"	.651	8.633	22	.021	8.633	y	21	10294....	11812.5	92.284	246.094	...	H1-1a
6	M193	.875 x .375	.526	6.999	21	.027	0	y	7	9442.4...	10335....	80.75	188.415	...	H1-1a
7	M190	3/8 x 1"	.523	0	21	.029	0	y	8	8991.7	11812.5	92.284	246.094	...	H1-1a
8	M367A	3/8 x 1"	.522	8.633	16	.020	0	y	20	10294....	11812.5	92.284	246.094	...	H1-1a
9	M334A	3/8 x 1"	.513	15.526	22	.020	15....	y	6	7571.5...	11812.5	92.284	246.094	...	H1-1a
10	M209	3/8 x 1"	.511	0	20	.031	0	y	7	7571.5...	11812.5	92.284	246.094	...	H1-1a
11	M318A	3/8 x 1"	.511	0	22	.005	0	y	12	8991.7	11812.5	92.284	246.094	...	H1-1a
12	MP4	PIPE_2.0	.509	25.263	5	.064	68....		11	14916....	32130	1871.6...	1871.6.....		H1-1b
13	MP1	PIPE_2.0	.509	25.263	8	.072	68....		2	14916....	32130	1871.6...	1871.6.....		H1-1b
14	MP10	PIPE_2.0	.509	25.263	5	.064	68....		5	14916....	32130	1871.6...	1871.6.....		H1-1b
15	M522	3/8 x 1"	.475	15.171	22	.015	15....	y	7	7725.05	11812.5	92.284	246.094	...	H1-1a
16	M517	3/8 x 1"	.469	15.171	20	.019	0	y	6	7725.05	11812.5	92.284	246.094	...	H1-1a
17	M192	3/8 x 1"	.451	0	21	.041	0	y	8	9652.3...	11812.5	92.284	246.094	...	H1-1a
18	M332A	3/8 x 1"	.435	11	22	.025	11	y	20	9449.0...	11812.5	92.284	246.094	...	H1-1a
19	M402	.5" x 4"	.432	3.888	4	.146	3.888	y	6	61925....	63000	656.25	5250	...	H1-1b
20	M206	3/8 x 1"	.431	11	20	.031	11	y	6	9449.0...	11812.5	92.284	246.094	...	H1-1a
21	M331A	3/8 x 1"	.429	11.484	22	.047	11....	y	7	9261.1...	11812.5	92.284	246.094	...	H1-1a
22	M320A	3/8 x 1"	.428	0	22	.014	10....	y	22	9652.3...	11812.5	92.284	246.094	...	H1-1a
23	M301	.5 x 2 3/8 "	.428	0	22	.083	0	y	22	36034....	37406....	389.65	1850.83	...	H1-1b
24	M213	.5" x 4"	.426	0	20	.061	2.118	z	21	54979....	63000	656.25	5250	...	H1-1b
25	M205	3/8 x 1"	.426	11.484	20	.048	11....	y	6	9261.1...	11812.5	92.284	246.094	...	H1-1a
26	M321A	.875 x .375	.419	6.999	22	.005	6.999	y	14	9442.4...	10335....	80.75	188.415	...	H1-1a
27	M154A	.5 x 2 3/8 "	.416	0	19	.081	0	y	21	36034....	37406....	389.65	1850.83	...	H1-1b
28	M336A	.5" x 4"	.413	0	22	.072	11.5	y	7	54979....	63000	656.25	5250	...	H1-1b
29	M304	.5 x 2 3/8 "	.408	0	22	.083	0	y	22	36034....	37406....	389.65	1850.83	...	H1-1b
30	M369A	.875 x .375	.406	6.999	16	.020	6.999	y	18	9442.4...	10335....	80.75	188.415	...	H1-1a
31	M382	3/8 x 1"	.400	15.526	16	.027	0	y	13	7571.5...	11812.5	92.284	246.094	...	H1-1a
32	M366A	3/8 x 1"	.397	0	16	.023	0	y	12	8991.7	11812.5	92.284	246.094	...	H1-1a
33	M157	.5 x 2 3/8 "	.390	0	21	.075	0	y	21	36034....	37406....	389.65	1850.83	...	H1-1b
34	MP12	PIPE_2.0	.389	68.211	7	.054	68....		2	14916....	32130	1871.6...	1871.6.....		H1-1b
35	MP2	PIPE_2.0	.386	68.211	5	.053	68....		5	14916....	32130	1871.6...	1871.6.....		H1-1b
36	M527	3/8 x 1"	.382	15.171	16	.016	0	y	2	7725.05	11812.5	92.284	246.094	...	H1-1a
37	M204	3/8 x 4	.377	11	20	.024	11	y	6	37795....	47250	369.141	3937.5	...	H1-1a
38	MP11	PIPE_2.0	.373	68.211	8	.057	68....		6	14916....	32130	1871.6...	1871.6.....		H1-1b
39	M330A	3/8 x 4	.367	11	22	.020	11	y	13	37795....	47250	369.141	3937.5	...	H1-1a

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc.....	...	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....	Eqn
40	M136A	L3X3X6	.366	0	22	.099	0 z	2	66373....	66465	2243.3...	5174.4.....	H2-1
41	MP3	PIPE 2.0	.360	68.211	5	.054	68....	6	14916....	32130	1871.6...	1871.6.....	H1-1b
42	M148	L3X3X6	.355	0	21	.111	4.52 z	3	66373....	66465	2243.3...	5174.4.....	H2-1
43	M187	3/8 x 1"	.353	0	20	.047	8.771 y	20	10249....	11812.5	92.284	246.094	H1-1b
44	M316A	3/8 x 1"	.353	0	22	.046	8.771 y	21	10249....	11812.5	92.284	246.094	H1-1b
45	M137A	L3X3X6	.351	4.52	22	.135	4.52 z	6	66373....	66465	2243.3...	5174.4.....	H2-1
46	M380	3/8 x 1"	.345	11	16	.024	11 y	2	9449.0...	11812.5	92.284	246.094	H1-1a
47	M461	PIPE 2.0	.345	99.474	4	.102	8.526	4	12143....	32130	1871.6...	1871.6.....	H1-1b
48	M210	3/8 x 1"	.345	0	20	.018	0 y	13	9657.4...	11812.5	92.284	246.094	H1-1a
49	M149	HSS4X3X4	.344	17.424	19	.169	16.... z	19	83040....	91665	8190	10001.....	H1-1b
50	M368A	3/8 x 1"	.344	0	16	.031	10.... y	16	9652.3...	11812.5	92.284	246.094	H1-1a
51	M335A	3/8 x 1"	.344	0	22	.021	10.... y	7	9657.4...	11812.5	92.284	246.094	H1-1a
52	M312	3/8 x 1"	.336	0	22	.025	7.776 y	22	10565....	11812.5	92.284	246.094	H1-1b
53	M415	3/8 x 1"	.334	8.633	4	.026	8.633 y	6	10294....	11812.5	92.284	246.094	H1-1a
54	M147	L3X3X6	.333	0	21	.071	0 y	5	66373....	66465	2243.3...	5174.4.....	H2-1
55	M317A	3/8 x 1"	.330	10.449	22	.015	10.... y	8	9657.3...	11812.5	92.284	246.094	H1-1a
56	M183	3/8 x 1"	.326	0	20	.030	7.776 y	8	10565....	11812.5	92.284	246.094	H1-1b
57	M203	3/8 x 4	.325	11.5	20	.037	11.5 y	6	37018....	47250	369.141	3937.5	H1-1a
58	M138	HSS4X3X4	.320	17.424	22	.170	16.... z	22	83040....	91665	8190	10001.....	H1-1b
59	M526	.5" x 4"	.319	11	7	.056	11 y	7	55620....	63000	656.25	5250	H1-1b
60	M329A	3/8 x 4	.318	11.5	22	.042	11.5 y	6	37018....	47250	369.141	3937.5	H1-1a
61	M352	.5 x 2 3/8 "	.317	0	16	.060	0 y	16	36034....	37406....	389.65	1850.83	H1-1b
62	M349	.5 x 2 3/8 "	.314	0	16	.054	0 y	16	36034....	37406....	389.65	1850.83	H1-1b
63	M474	PIPE 2.0	.313	99.474	7	.102	8.526	14	12143....	32130	1871.6...	1871.6.....	H1-1b
64	M487	PIPE_2.0	.311	8.526	5	.063	36....	11	12143....	32130	1871.6...	1871.6.....	H1-1b
65	M521	.5" x 4"	.310	11	6	.044	11 y	12	55620....	63000	656.25	5250	H1-1b
66	M378	3/8 x 4	.305	11	16	.022	11 y	14	37795....	47250	369.141	3937.5	H1-1a
67	M384	.5" x 4"	.297	0	16	.047	2.118 z	16	54979....	63000	656.25	5250	H1-1b
68	M430A	3/8 x 1"	.294	0	19	.031	15.... y	6	7571.5...	11812.5	92.284	246.094	H1-1a
69	M532	3/8 x 1"	.288	15.171	17	.012	15.... y	6	7725.05	11812.5	92.284	246.094	H1-1a
70	M383	3/8 x 1"	.282	10.449	16	.015	0 y	7	9657.4...	11812.5	92.284	246.094	H1-1a
71	M299	.5 x 2 3/8 "	.279	0	22	.040	0 y	22	36034....	37406....	389.65	1850.83	H1-1b
72	M135A	L3X3X6	.279	14.726	22	.174	34.... y	16	65547....	66465	2243.3...	5174.4.....	H2-1
73	M315	3/8 x 1"	.277	7.998	22	.041	7.998 y	22	10497....	11812.5	92.284	246.094	H1-1b
74	M230	L3X3X6	.275	14.726	21	.168	34.... z	20	65547....	66465	2243.3...	5174.4.....	H2-1
75	M379	3/8 x 1"	.274	11.484	16	.035	11.... y	6	9261.1...	11812.5	92.284	246.094	H1-1b
76	M186	3/8 x 1"	.272	7.998	20	.043	7.998 y	20	10497....	11812.5	92.284	246.094	H1-1b
77	M214	L3X3X6	.271	14.726	22	.182	34.... z	22	65547....	66465	2243.3...	5174.4.....	H2-1
78	MP9	PIPE_2.0	.271	68.211	5	.044	68....	4	14916....	32130	1871.6...	1871.6.....	H1-1b
79	MP5	PIPE_2.0	.271	68.211	8	.039	68....	8	14916....	32130	1871.6...	1871.6.....	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc.....	...		phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....		Eqn
80	M500	PIPE_2.0	.270	99.474	2	.093	8.526		5	12143...	32130	1871.6...	1871.6...	...	H1-1b
81	M364A	3/8 x 1"	.268	0	16	.039	8.771	y	2	10249...	11812.5	92.284	246.094	...	H1-1b
82	M302	.5 x 2 3/8 "	.264	0	22	.028	0	y	16	36034...	37406....	389.65	1850.83	...	H1-1b
83	M414	3/8 x 1"	.263	0	4	.038	0	y	7	8991.7	11812.5	92.284	246.094	...	H1-1a
84	M243	HSS4X3X4	.260	17.424	16	.127	16....	z	16	83040...	91665	8190	10001...	....	H1-1b
85	M397	.5 x 2 3/8 "	.260	0	17	.054	0	y	19	36034...	37406....	389.65	1850.83	...	H1-1b
86	M400A	.5 x 2 3/8 "	.260	0	17	.049	0	y	17	36034...	37406....	389.65	1850.83	...	H1-1b
87	M152A	.5 x 2 3/8 "	.260	0	19	.036	0	y	19	36034...	37406....	389.65	1850.83	...	H1-1b
88	MP6	PIPE_2.0	.257	68.211	8	.059	68....		4	14916...	32130	1871.6...	1871.6...	....	H1-1b
89	M155A	.5 x 2 3/8 "	.257	0	21	.036	0	y	22	36034...	37406....	389.65	1850.83	...	H1-1b
90	M525	3/8 x 1"	.256	11	22	.028	11	y	21	9449.0...	11812.5	92.284	246.094	...	H1-1b
91	M146	L3X3X6	.256	14.726	19	.144	34....	y	22	65547...	66465	2243.3...	5174.4...	....	H2-1
92	M520	3/8 x 1"	.256	11	20	.030	11	y	22	9449.0...	11812.5	92.284	246.094	...	H1-1b
93	M242	L3X3X6	.254	0	16	.114	0	z	11	66373...	66465	2243.3...	5174.4...	....	H2-1
94	M188	3/8 x 1"	.249	10.449	22	.027	10....	y	7	9657.3...	11812.5	92.284	246.094	...	H1-1b
95	MP8	PIPE_2.0	.248	68.211	12	.046	68....		5	14916...	32130	1871.6...	1871.6...	....	H1-1b
96	M311	3/8 x 1"	.248	12.278	22	.029	12....	y	22	8944.1...	11812.5	92.284	246.094	...	H1-1b
97	M360A	3/8 x 1"	.246	0	16	.021	7.776	y	16	10565...	11812.5	92.284	246.094	...	H1-1b
98	M241	L3X3X6	.241	0	16	.102	0	z	5	66373...	66465	2243.3...	5174.4...	....	H2-1
99	M531	.5" x 4"	.241	11	2	.038	11	y	8	55620...	63000	656.25	5250	...	H1-1b
100	M303	.5 x 2 3/8 "	.237	0	22	.025	0	y	16	36034...	37406....	389.65	1850.83	...	H1-1b
101	M417	.875 x .375	.237	6.999	6	.030	6.999	y	6	9442.4...	10335....	80.75	188.415	...	H1-1b
102	M182	3/8 x 1"	.234	12.278	21	.044	12....	y	8	8944.1...	11812.5	92.284	246.094	...	H1-1b
103	M300	.5 x 2 3/8 "	.233	0	22	.037	0	y	22	36034...	37406....	389.65	1850.83	...	H1-1b
104	M346	L3X3X6	.232	4.52	17	.065	0	z	8	66373...	66465	2243.3...	5174.4...	....	H2-1
105	M153A	.5 x 2 3/8 "	.231	0	21	.031	0	y	19	36034...	37406....	389.65	1850.83	...	H1-1b
106	M432A	.5" x 4"	.229	0	4	.041	2.118	z	5	54979...	63000	656.25	5250	...	H1-1b
107	M431A	3/8 x 1"	.225	10.449	17	.014	10....	y	7	9657.4...	11812.5	92.284	246.094	...	H1-1a
108	M477	PIPE_2.0	.219	68.211	16	.051	68....		8	14916...	32130	1871.6...	1871.6...	....	H1-1b
109	M347	L3X3X6	.215	0	19	.062	0	z	12	66373...	66465	2243.3...	5174.4...	....	H2-1
110	M156	.5 x 2 3/8 "	.214	0	21	.026	0	y	22	36034...	37406....	389.65	1850.83	...	H1-1b
111	M490	PIPE_2.0	.213	68.211	19	.041	68....		12	14916...	32130	1871.6...	1871.6...	....	H1-1b
112	M240	L3X3X6	.212	14.726	16	.113	34....	y	17	65547...	66465	2243.3...	5174.4...	....	H2-1
113	M365A	3/8 x 1"	.211	10.449	16	.024	10....	y	13	9657.3...	11812.5	92.284	246.094	...	H1-1b
114	M363A	3/8 x 1"	.206	7.998	16	.036	7.998	y	16	10497...	11812.5	92.284	246.094	...	H1-1b
115	M464	PIPE_2.0	.202	68.211	22	.052	68....		4	14916...	32130	1871.6...	1871.6...	....	H1-1b
116	M530	3/8 x 1"	.200	11	16	.032	11	y	22	9449.0...	11812.5	92.284	246.094	...	H1-1b
117	M427A	3/8 x 1"	.194	11.484	17	.045	11....	y	6	9261.1...	11812.5	92.284	246.094	...	H1-1b
118	M350	.5 x 2 3/8 "	.193	0	16	.022	0	y	17	36034...	37406....	389.65	1850.83	...	H1-1b
119	M347A	.5 x 2 3/8 "	.192	0	16	.033	0	y	22	36034...	37406....	389.65	1850.83	...	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc.....	...	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....	Eqn
120	M319	L3X3X6	.185	14.726	16	.095	34....	z 16	65547...	66465	2243.3...	5174.4.....	H2-1
121	M428A	3/8 x 1"	.183	11	17	.020	11	y 6	9449.0...	11812.5	92.284	246.094 ...	H1-1b
122	M181	3/8 x 4	.182	8.906	20	.023	8.906	y 5	40816....	47250	369.141	3937.5 ...	H1-1b
123	M377	3/8 x 4	.178	11.5	16	.036	0	y 13	37018....	47250	369.141	3937.5 ...	H1-1b
124	M310	3/8 x 4	.175	8.906	22	.029	8.906	y 6	40816....	47250	369.141	3937.5 ...	H1-1b
125	M416	3/8 x 1"	.175	0	5	.048	10....	y 6	9652.3...	11812.5	92.284	246.094 ...	H1-1b
126	M359A	3/8 x 1"	.175	12.278	16	.029	5.816	y 12	8944.1...	11812.5	92.284	246.094 ...	H1-1b
127	M424	L3X3X6	.173	14.726	19	.126	34....	z 17	65547....	66465	2243.3...	5174.4.....	H2-1
128	MP7	PIPE_2.0	.168	68.211	16	.038	68....	5	14916....	32130	1871.6...	1871.6.....	H1-1b
129	M412A	3/8 x 1"	.166	8.771	17	.021	8.771	y 19	10249....	11812.5	92.284	246.094 ...	H1-1b
130	M348A	.5 x 2 3/8 "	.164	0	16	.021	0	y 22	36034....	37406....	389.65	1850.83 ...	H1-1b
131	M395	.5 x 2 3/8 "	.164	0	17	.017	0	y 16	36034....	37406....	389.65	1850.83 ...	H1-1b
132	M231	PIPE_2.5	.162	39.789	5	.199	99....	8	38327....	50715	3596.25	3596.25 ...	H1-1b
133	M194	.875 x .375	.161	8.719	21	.040	0	y 8	8982.9...	10335....	80.75	188.415 ...	H1-1b
134	M426A	PIPE_2.5	.161	39.789	8	.167	71....	4	38327....	50715	3596.25	3596.25 ...	H1-1b
135	M398	.5 x 2 3/8 "	.159	0	19	.023	0	y 19	36034....	37406....	389.65	1850.83 ...	H1-1b
136	M345	L3X3X6	.159	0	22	.112	33....	y 22	65547....	66465	2243.3...	5174.4.....	H2-1
137	M503	PIPE_2.0	.158	68.211	2	.028	68....	7	14916....	32130	1871.6...	1871.6.....	H1-1b
138	M351	.5 x 2 3/8 "	.158	0	16	.017	0	y 16	36034....	37406....	389.65	1850.83 ...	H1-1b
139	M426B	3/8 x 4	.156	0	17	.015	11	y 7	37795....	47250	369.141	3937.5 ...	H1-1b*
140	M408	3/8 x 1"	.156	0	4	.045	7.776	y 6	10565....	11812.5	92.284	246.094 ...	H1-1b
141	M322A	.875 x .375	.153	8.719	22	.013	8.719	y 22	8982.9...	10335....	80.75	188.415 ...	H1-1b
142	M333A	3/8 x 1"	.153	11.5	20	.022	11.5	y 7	9254.8...	11812.5	92.284	246.094 ...	H1-1b
143	M399	.5 x 2 3/8 "	.153	0	17	.019	0	y 19	36034....	37406....	389.65	1850.83 ...	H1-1b
144	M431	PIPE_2.5	.153	36.947	16	.083	99....	55	38327....	50715	3596.25	3596.25 ...	H1-1b
145	M396	.5 x 2 3/8 "	.150	0	19	.021	0	y 16	36034....	37406....	389.65	1850.83 ...	H1-1b
146	M207	3/8 x 1"	.149	11.5	20	.017	11.5	y 22	9254.8...	11812.5	92.284	246.094 ...	H1-1b
147	M413	3/8 x 1"	.145	10.449	5	.023	10....	y 13	9657.3...	11812.5	92.284	246.094 ...	H1-1b
148	M536	.5" x 4"	.144	11	6	.013	0	y 20	55620....	63000	656.25	5121.3.....	H1-1b
149	M535	3/8 x 1"	.136	11	17	.021	11	y 19	9449.0...	11812.5	92.284	246.094 ...	H1-1b
150	M358A	3/8 x 4	.134	8.906	16	.023	8.906	y 2	40816....	47250	369.141	3937.5 ...	H1-1b
151	M180	3/8 x 4	.134	7.998	20	.012	7.998	y 5	41988....	47250	369.141	3937.5 ...	H1-1b
152	M309	3/8 x 4	.131	7.998	22	.017	7.998	y 13	41988....	47250	369.141	3937.5 ...	H1-1b
153	M348	HSS4X3X4	.129	17.424	4	.081	16....	z 4	83040....	91665	8190	10001.....	H1-1b
154	M381	3/8 x 1"	.128	11.5	16	.025	11.5	y 22	9254.8...	11812.5	92.284	246.094 ...	H1-1b
155	M411A	3/8 x 1"	.128	7.998	4	.022	7.998	y 17	10497....	11812.5	92.284	246.094 ...	H1-1b
156	M297	3/8 x 3	.126	0	18	.092	7.261	y 16	32152....	35437.5	276.856	2214.8.....	H1-1b
157	M425B	3/8 x 4	.124	11.5	19	.040	0	y 6	37018....	47250	369.141	3937.5 ...	H1-1b
158	M436	PIPE_2.5	.123	73.895	6	.199	99....	5	38327....	50715	3596.25	3596.25 ...	H1-1b
159	M370A	.875 x .375	.123	8.719	16	.030	0	y 12	8982.9...	10335....	80.75	188.415 ...	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc.....	...	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....	Eqn
160	M151	3/8 x 3	.117	0	16	.099	7.261	y 19	32152...	35437.5	276.856	2214.8.....	H1-1b
161	M407	3/8 x 1"	.115	12.278	4	.045	12....	y 6	8944.1...	11812.5	92.284	246.094 ...	H1-1b
162	M450	3/16 X 1 1/2	.112	20.245	2	.009	20....	y 16	458.03	8883	34.792	277.594 ...	H1-1b
163	M305A	.5" x 4"	.112	12.278	22	.010	12....	y 7	53941....	63000	656.25	5250 ...	H1-1b
164	M443	3/16 X 1 1/2	.111	20.245	6	.010	20....	y 19	458.03	8883	34.792	277.594 ...	H1-1b
165	M448	3/16 X 1 1/2	.111	20.245	2	.010	20....	y 22	458.03	8883	34.792	277.594 ...	H1-1b
166	M176	.5" x 4"	.107	12.278	19	.046	12....	y 8	53941....	63000	656.25	5250 ...	H1-1b
167	M445	3/16 X 1 1/2	.106	20.245	5	.009	20....	y 22	458.03	8883	34.792	277.594 ...	H1-1b
168	M460	3/16 X 1 1/2	.106	0	2	.014	20....	y 22	458.03	8883	34.792	277.594 ...	H1-1b
169	M449	3/16 X 1 1/2	.106	20.245	2	.008	20....	y 22	458.03	8883	34.792	277.594 ...	H1-1b
170	M453	3/16 X 1 1/2	.105	0	5	.011	20....	y 16	458.03	8883	34.792	277.594 ...	H1-1b
171	M429A	3/8 x 1"	.103	11.5	20	.024	11.5	y 21	9254.8...	11812.5	92.284	246.094 ...	H1-1b
172	M444	3/16 X 1 1/2	.103	20.245	6	.008	20....	y 19	458.03	8883	34.792	277.594 ...	H1-1b
173	M298	3/8 x 3	.101	0	22	.110	7.261	y 22	32152...	35437.5	276.856	2214.8.....	H1-1b
174	M418	.875 x .375	.101	8.719	5	.033	8.719	y 6	8982.9...	10335....	80.75	188.415 ...	H1-1b
175	M458	3/16 X 1 1/2	.098	0	8	.012	20....	y 21	458.03	8883	34.792	277.594 ...	H1-1b
176	M442	PIPE_1.5	.096	17.111	16	.036	34....	19	20241...	23593.5	1105.1...	1105.1.....	H1-1b
177	M357A	3/8 x 4	.095	7.998	16	.014	7.998	y 2	41988....	47250	369.141	3937.5 ...	H1-1b
178	M459	3/16 X 1 1/2	.095	0	2	.012	20....	y 22	458.03	8883	34.792	277.594 ...	H1-1b
179	M447	PIPE_1.5	.094	17.111	20	.034	0	16	20241...	23593.5	1105.1...	1105.1.....	H1-1b
180	M454	3/16 X 1 1/2	.094	0	5	.010	20....	y 16	458.03	8883	34.792	277.594 ...	H1-1b
181	M314	3/8 x 1"	.093	12.543	22	.014	12....	y 22	8836.4...	11812.5	92.284	246.094 ...	H1-1b
182	M393	3/8 x 3	.091	0	20	.069	7.261	y 17	32152...	35437.5	276.856	2214.8.....	H1-1b
183	M452	PIPE_1.5	.090	17.111	22	.034	34....	16	20241...	23593.5	1105.1...	1105.1.....	H1-1b
184	M457	PIPE_1.5	.089	17.111	22	.043	0	20	20241...	23593.5	1105.1...	1105.1.....	H1-1b
185	M150	3/8 x 3	.088	0	22	.078	7.261	y 22	32152...	35437.5	276.856	2214.8.....	H1-1b
186	M345A	3/8 x 3	.088	0	6	.051	7.261	y 16	32152...	35437.5	276.856	2214.8.....	H1-1b
187	M353	.5" x 4"	.087	12.278	16	.042	12....	y 12	53941....	63000	656.25	5250 ...	H1-1b
188	M455	3/16 X 1 1/2	.087	0	5	.010	20....	y 16	458.03	8883	34.792	277.594 ...	H1-1b
189	M406	3/8 x 4	.085	8.906	19	.007	0	y 20	40816....	47250	369.141	3937.5 ...	H1-1b
190	M346A	3/8 x 3	.085	0	16	.071	7.261	y 16	32152...	35437.5	276.856	2214.8.....	H1-1b
191	M185	3/8 x 1"	.080	12.543	21	.016	12....	y 20	8836.4...	11812.5	92.284	246.094 ...	H1-1b
192	M419	.875 x .375	.070	5.606	6	.016	5.606	y 13	9753.6...	10335....	80.75	188.415 ...	H1-1b
193	M401A	.5" x 4"	.069	12.278	5	.057	12....	y 6	53941....	63000	656.25	5250 ...	H1-1b
194	M195	.875 x .375	.068	5.606	8	.012	5.606	y 8	9753.6...	10335....	80.75	188.415 ...	H1-1b
195	M451	PIPE_1.5	.065	17.11	22	.028	0	16	20242...	23593.5	1105.1...	1105.1.....	H1-1b
196	M362A	3/8 x 1"	.063	12.543	16	.018	12....	y 16	8836.4...	11812.5	92.284	246.094 ...	H1-1b
197	M441	PIPE_1.5	.062	17.11	17	.021	0	20	20242...	23593.5	1105.1...	1105.1.....	H1-1b
198	M405	3/8 x 4	.062	7.998	4	.007	0	y 20	41988....	47250	369.141	3937.5 ...	H1-1b
199	M409	3/8 x 1"	.060	8.619	22	.007	8.619	y 7	10299...	11812.5	92.284	246.094 ...	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc.....	...	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....	Eqn
200	M313	3/8 x 1"	.059	8.619	17	.005	8.619 y	17	10299...	11812.5	92.284	246.094 ...	H1-1b
201	M446	PIPE 1.5	.058	17.11	20	.021	34....	16	20242...	23593.5	1105.1...	1105.1.....	H1-1b
202	M361A	3/8 x 1"	.057	8.619	21	.007	8.619 y	6	10299...	11812.5	92.284	246.094 ...	H1-1b
203	M394	3/8 x 3	.056	0	16	.058	7.261 y	17	32152...	35437.5	276.856	2214.8.....	H1-1b
204	M184	3/8 x 1"	.053	8.619	16	.006	8.619 y	2	10299...	11812.5	92.284	246.094 ...	H1-1b
205	M371A	.875 x .375	.052	5.606	12	.010	0 y	5	9753.6...	10335....	80.75	188.415 ...	H1-1b
206	M456	PIPE_1.5	.051	17.11	22	.042	34....	20	20242...	23593.5	1105.1...	1105.1.....	H1-1b
207	M410A	3/8 x 1"	.045	12.543	4	.014	12.... y	20	8836.4...	11812.5	92.284	246.094 ...	H1-1b
208	M196	3/4 x 3/8	.045	7.145	8	.023	0 y	8	8062.9...	8859.3...	69.213	138.427 ...	H1-1b
209	M308	3/8 x 4	.040	12.543	21	.006	12.... y	13	35344....	47250	369.141	3937.5 ...	H1-1b
210	M197	3/4 x 3/8	.037	4.437	8	.007	4.437 y	8	8543.3...	8859.3...	69.213	138.427 ...	H1-1b
211	M179	3/8 x 4	.036	12.543	6	.006	12.... y	5	35344....	47250	369.141	3937.5 ...	H1-1b
212	M372A	3/4 x 3/8	.035	7.145	12	.019	0 y	12	8062.9...	8859.3...	69.213	138.427 ...	H1-1b
213	M356	3/8 x 4	.033	12.543	20	.010	12.... y	2	35344....	47250	369.141	3937.5 ...	H1-1b
214	M355	.5" x 4"	.033	8.619	6	.012	0 y	12	58360....	63000	656.25	5250 ...	H1-1b
215	M373A	3/4 x 3/8	.032	4.437	12	.007	0 y	5	8543.3...	8859.3...	69.213	138.427 ...	H1-1b
216	M420	3/4 x 3/8	.031	7.145	6	.013	7.145 y	6	8062.9...	8859.3...	69.213	138.427 ...	H1-1b
217	M421A	3/4 x 3/8	.030	4.437	6	.009	4.437 y	13	8543.3...	8859.3...	69.213	138.427 ...	H1-1b
218	M178	.5" x 4"	.028	0	2	.011	0 y	10	58360....	63000	656.25	5250 ...	H1-1b
219	M307A	.5" x 4"	.028	8.619	17	.005	0 y	7	58360....	63000	656.25	5250 ...	H1-1b
220	M323A	.875 x .375	.026	0	22	.002	5.606 y	13	9753.6...	10335....	80.75	188.415 ...	H1-1b
221	M403	.5" x 4"	.026	8.619	22	.014	0 y	6	58360....	63000	656.25	5250 ...	H1-1b
222	M404	3/8 x 4	.025	12.543	16	.009	5.941 y	20	35344....	47250	369.141	3937.5 ...	H1-1b
223	M198	3/4 x 3/8	.025	5.846	8	.014	5.846 y	8	8317.8...	8859.3...	69.213	138.427 ...	H1-1b
224	M374A	3/4 x 3/8	.023	5.846	12	.012	0 y	12	8317.8...	8859.3...	69.213	138.427 ...	H1-1b
225	M199	3/8 x 5/8	.020	3.452	8	.003	0 y	2	7222.2...	7382.8...	57.679	96.13 ...	H1-1b
226	M375	3/8 x 5/8	.018	3.452	12	.003	0 y	5	7222.2...	7382.8...	57.679	96.13 ...	H1-1b
227	M324A	3/4 x 3/8	.017	7.145	22	.002	7.145 y	20	8062.9...	8859.3...	69.213	138.427 ...	H1-1b
228	M437A	.5" x 4"	.016	8.699	13	.014	8.699 y	6	58277....	63000	656.25	5250 ...	H1-1b
229	M422B	3/4 x 3/8	.016	5.846	6	.006	0 y	6	8317.8...	8859.3...	69.213	138.427 ...	H1-1b
230	M389	.5" x 4"	.016	8.699	4	.019	8.699 y	12	58277....	63000	656.25	5250 ...	H1-1b
231	M200	3/8 x 5/8	.016	4.766	8	.006	0 y	8	7079.7...	7382.8...	57.679	96.13 ...	H1-1b
232	M423B	3/8 x 5/8	.015	3.452	6	.005	3.452 y	13	7222.2...	7382.8...	57.679	96.13 ...	H1-1b
233	M376	3/8 x 5/8	.014	4.766	12	.005	4.766 y	12	7079.7...	7382.8...	57.679	96.13 ...	H1-1b
234	M223	.5" x 4"	.014	8.699	3	.020	8.699 y	8	58277....	63000	656.25	5250 ...	H1-1b
235	M392	3/8 x 4	.012	8.886	20	.006	4.209 y	16	40842....	47250	369.141	3937.5 ...	H1-1b
236	M224	3/8 x 1"	.010	8.699	8	.013	8.699 y	8	10273....	11812.5	92.284	246.094 ...	H1-1b
237	M424B	3/8 x 5/8	.010	4.766	6	.003	4.766 y	7	7079.7...	7382.8...	57.679	96.13 ...	H1-1b
238	M440A	3/8 x 4	.009	8.886	16	.003	8.886 y	21	40842....	47250	369.141	3937.5 ...	H1-1b
239	M390	3/8 x 1"	.008	8.699	12	.012	8.699 y	12	10273....	11812.5	92.284	246.094 ...	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc.....	...	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....		Eqn
240	M341A	.5" x 4"	.008	8.699	6	.003	8.699	y 14	58277....	63000	656.25	5250	...	H1-1b
241	M226	3/8 x 4	.008	8.886	2	.006	0	y 8	40842....	47250	369.141	3937.5	...	H1-1b
242	M438A	3/8 x 1"	.008	8.699	6	.008	8.699	y 6	10273....	11812.5	92.284	246.094	...	H1-1b
243	M391	3/8 x 1"	.007	8.886	22	.007	8.886	y 16	10210....	11812.5	92.284	246.094	...	H1-1b
244	M439A	3/8 x 1"	.006	8.886	22	.003	8.886	y 20	10210....	11812.5	92.284	246.094	...	H1-1b
245	M225	3/8 x 1"	.006	0	20	.005	3.975	y 8	10210....	11812.5	92.284	246.094	...	H1-1b
246	M325A	3/4 x 3/8	.006	0	16	.002	4.437	y 13	8543.3...	8859.3...	69.213	138.427	...	H1-1b
247	M523	3/8 x 1"	.005	10.449	7	.001	10....	y 11	9657.2...	11812.5	92.284	246.094	...	H1-1b
248	M518	3/8 x 1"	.005	10.449	7	.001	10....	y 11	9657.2...	11812.5	92.284	246.094	...	H1-1b
249	M528	3/8 x 1"	.005	10.449	7	.001	10....	y 11	9657.2...	11812.5	92.284	246.094	...	H1-1b
250	M533	3/8 x 1"	.005	10.449	7	.001	10....	y 11	9657.2...	11812.5	92.284	246.094	...	H1-1b
251	M344	3/8 x 4	.005	8.886	7	.002	8.886	y 13	40842....	47250	369.141	3937.5	...	H1-1b
252	M326A	3/4 x 3/8	.005	3.539	20	.001	0	y 20	8317.8...	8859.3...	69.213	138.427	...	H1-1b
253	M343A	3/8 x 1"	.005	0	20	.002	3.975	y 20	10210....	11812.5	92.284	246.094	...	H1-1b
254	M327A	3/8 x 5/8	.004	0	16	.001	3.452	y 13	7222.2...	7382.8...	57.679	96.13	...	H1-1b
255	M436A	3/8 x 1"	.004	0	18	.002	2.635	y 17	10137....	11812.5	92.284	246.094	...	H1-1b
256	M222	3/8 x 1"	.004	0	21	.002	2.635	y 20	10137....	11812.5	92.284	246.094	...	H1-1b
257	M340A	3/8 x 1"	.004	0	22	.002	2.635	y 22	10137....	11812.5	92.284	246.094	...	H1-1b
258	M388A	3/8 x 1"	.004	0	16	.002	2.635	y 16	10137....	11812.5	92.284	246.094	...	H1-1b
259	M328A	3/8 x 5/8	.003	0	20	.001	4.766	y 20	7079.7...	7382.8...	57.679	96.13	...	H1-1b
260	M342A	3/8 x 1"	.003	8.699	22	.001	8.699	y 20	10273....	11812.5	92.284	246.094	...	H1-1b
261	M339A	3/8 x 1"	.002	6.005	21	.001	6.005	y 22	10129....	11812.5	92.284	246.094	...	H1-1b
262	M387	3/8 x 1"	.002	6.005	17	.001	6.005	y 16	10129....	11812.5	92.284	246.094	...	H1-1b
263	M435A	3/8 x 1"	.002	6.005	20	.001	6.005	y 17	10129....	11812.5	92.284	246.094	...	H1-1b
264	M221	3/8 x 1"	.002	6.005	18	.001	6.005	y 20	10129....	11812.5	92.284	246.094	...	H1-1b
265	M337A	3/8 x 4	.001	5.668	21	.001	5.668	y 6	40725....	47250	369.141	3937.5	...	H1-1b
266	M385	3/8 x 4	.001	5.668	17	.001	5.668	y 3	40725....	47250	369.141	3937.5	...	H1-1b
267	M433A	3/8 x 4	.001	5.668	20	.001	5.668	y 13	40725....	47250	369.141	3937.5	...	H1-1b
268	M219	3/8 x 4	.001	5.668	18	.001	5.668	y 4	40725....	47250	369.141	3937.5	...	H1-1b
269	M338A	.5" x 4"	.001	6.005	21	.000	6.005	y 13	57820....	63000	656.25	5250	...	H1-1b
270	M386	.5" x 4"	.001	6.005	17	.000	6.005	y 10	57820....	63000	656.25	5250	...	H1-1b
271	M434A	.5" x 4"	.001	6.005	20	.000	6.005	y 13	57820....	63000	656.25	5250	...	H1-1b
272	M220	.5" x 4"	.001	6.005	18	.000	6.005	y 11	57820....	63000	656.25	5250	...	H1-1b

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CTFF899A

32 Columbus Road
Stratford, Connecticut 06615

November 12, 2021

EBI Project Number: 6221007146

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**99.47%**

November 12, 2021

T-Mobile
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CTFF899A -

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **32 Columbus Road** in **Stratford, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 32 Columbus Road in Stratford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

13) The antennas used in this modeling are the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in

the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

14) The antenna mounting height centerline of the proposed antennas is 72 feet above ground level (AGL).

15) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

16) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd
Height (AGL):	72 feet	Height (AGL):	72 feet	Height (AGL):	72 feet
Channel Count:	5	Channel Count:	5	Channel Count:	5
Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts
ERP (W):	4,151.83	ERP (W):	4,151.83	ERP (W):	4,151.83
Antenna A1 MPE %:	**8.15%**	Antenna B1 MPE %:	**8.15%**	Antenna C1 MPE %:	**8.15%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	72 feet	Height (AGL):	72 feet	Height (AGL):	72 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A2 MPE %:	**30.01%**	Antenna B2 MPE %:	**30.01%**	Antenna C2 MPE %:	**30.01%**
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.15 dBd / 15.15 dBd / 15.8 dBd	Gain:	15.15 dBd / 15.15 dBd / 15.8 dBd	Gain:	15.15 dBd / 15.15 dBd / 15.8 dBd
Height (AGL):	72 feet	Height (AGL):	72 feet	Height (AGL):	72 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	12,418.45	ERP (W):	12,418.45	ERP (W):	12,418.45
Antenna A3 MPE %:	**10.25%**	Antenna B3 MPE %:	**10.25%**	Antenna C3 MPE %:	**10.25%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	48.41%
AT&T	14.82%
Verizon	30.07%
Metro PCS	1.91%
Com-tronics	4.26%
Site Total MPE % :	99.47%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	48.41%
T-Mobile Sector B Total:	48.41%
T-Mobile Sector C Total:	48.41%
Site Total MPE % :	99.47%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 600 MHz LTE	2	591.73	72.0	9.77	600 MHz LTE	400	2.44%
T-Mobile 600 MHz NR	1	1577.94	72.0	13.02	600 MHz NR	400	3.26%
T-Mobile 700 MHz LTE	2	695.22	72.0	11.48	700 MHz LTE	467	2.46%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	72.0	91.15	2500 MHz LTE 1C & 2C Traffic	1000	9.12%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	72.0	8.86	2500 MHz LTE 1C & 2C Broadcast	1000	0.89%
T-Mobile 2500 MHz NR Traffic	1	22089.26	72.0	182.31	2500 MHz NR Traffic	1000	18.23%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	72.0	17.73	2500 MHz NR Broadcast	1000	1.77%
T-Mobile 1900 MHz GSM	4	982.02	72.0	32.42	1900 MHz GSM	1000	3.24%
T-Mobile 1900 MHz LTE	2	1964.04	72.0	32.42	1900 MHz LTE	1000	3.24%
T-Mobile 2100 MHz LTE	2	2281.14	72.0	37.65	2100 MHz LTE	1000	3.77%
						Total:	**48.41%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	48.41%
Sector B:	48.41%
Sector C:	48.41%
T-Mobile Maximum MPE % (Sector A):	48.41%
Site Total:	99.47%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **99.47%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Exhibit G

Mailing Receipts/ Proof Postage

UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

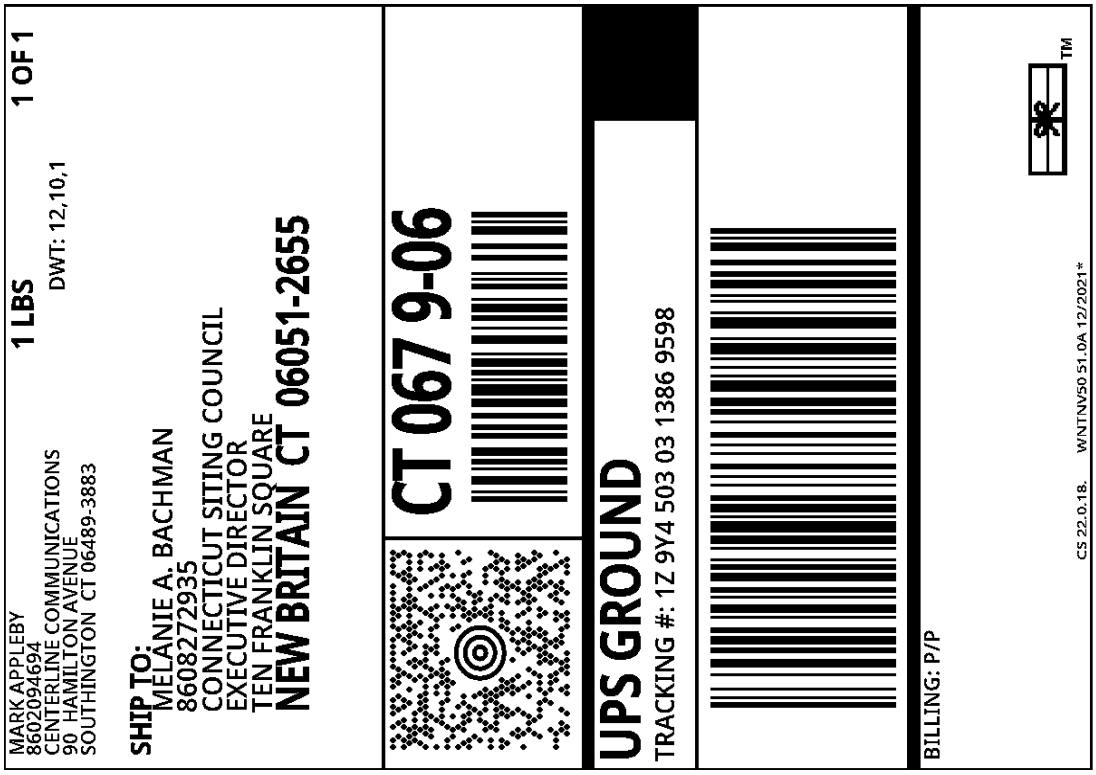
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

UPS Access Point™
CVS STORE # 1060
326 MAIN ST
SOUTHINGTON ,CT 06489

UPS Access Point™
MICHAELS STORE # 1279
99 EXECUTIVE BLVD
SOUTHINGTON ,CT 06489

UPS Access Point™
ADVANCE AUTO PARTS STORE 8525
151 QUEEN ST
SOUTHINGTON ,CT 06489

FOLD HERE



Shipment Receipt

Transaction Date: 17 Dec 2021 **Tracking Number:** 1Z9Y45030313869598

1 Address Information

Ship To:
Connecticut Siting Council
Melanie A. Bachman
Ten Franklin Square
Executive Director
NEW BRITAIN CT 060512655
Telephone:8608272935

Ship From:
Centerline Communications
Mark Appleby
90 Hamilton Avenue
SOUTHINGTON CT 064893883
Telephone:8602094694
email:mappleby@clinellc.com
Residential

Return Address:
Centerline Communications
Mark Appleby
90 Hamilton Avenue
SOUTHINGTON CT 064893883
Telephone:8602094694 email:mappleby@clinellc.com
Residential

2 Package Information

	Weight	Dimensions / Packaging	Declared Value	Reference Numbers	
1.	0.7 lbs (1.0 lbs billable)	12 x 10 x 1in. Other Packaging			

3 UPS Shipping Service and Shipping Options

Service: UPS Ground Service

Delivered By: End of Day Monday, Dec 20, 2021

⚠ Please note that extremely high volume on December 20-21 may add one day in transit for a small number of UPS 2nd Day Air® and UPS 3 Day Select® shipments. See if you may be affected:
Check for Service Impacts

⚠ Please note that extremely high volume on November 14, 2021 - January 15, 2022 may add one day in transit for a small number of Ground shipments. See if you may be affected:
Check for Service Impacts

Shipping Fees Subtotal: 9.72 USD
Transportation 8.76 USD
Fuel Surcharge 0.96 USD

Additional Shipping Options

Quantum View Notify E-mail Notifications: No Charge
1 mappleby@clinellc.com: Ship, Delivery

4 Payment Information

Bill Shipping Charges to: Shipper's Account 9Y4503

Shipping Charges:	**9.72 USD**
Subtotal Shipping Charges:	**9.72 USD**
Total Charged:	**9.72 USD**

Note: This document is not an invoice. Your final invoice may vary from the displayed reference rates.

* For delivery and guarantee information, see the UPS Service Guide ({0}). To speak to a customer service representative, call 1-800-PICK-UPS for domest services and 1-800-782-7892 for international services.